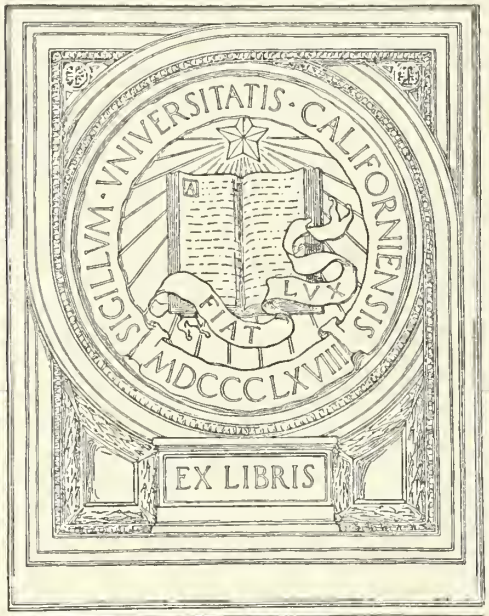
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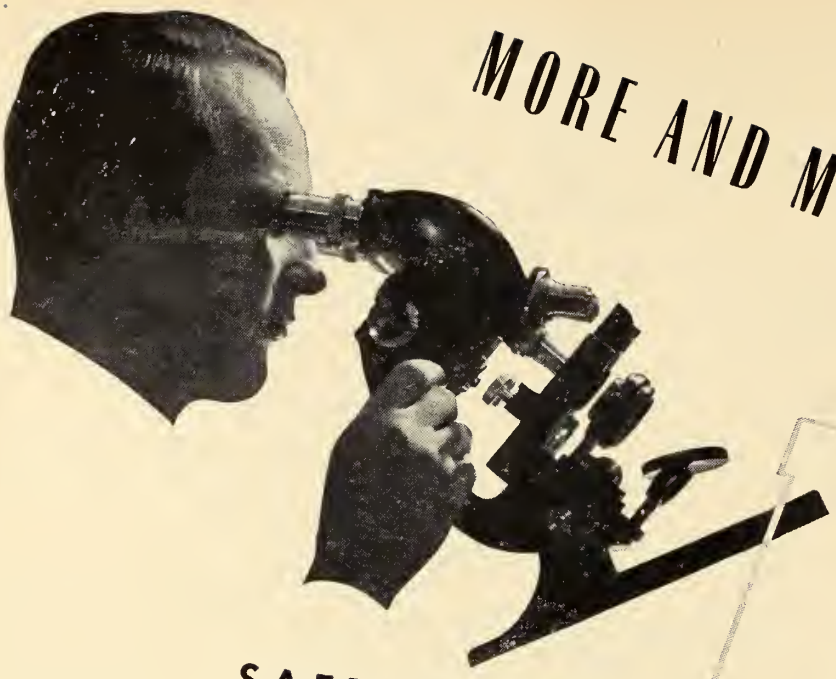
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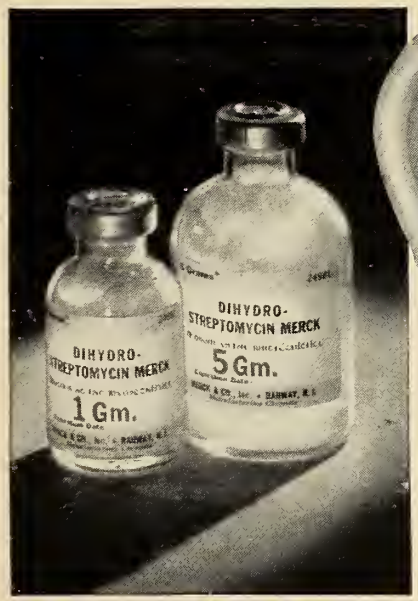
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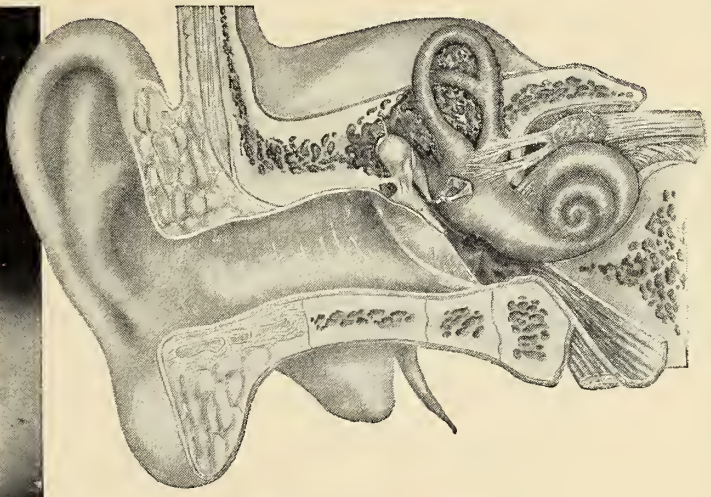
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[1] Nutrition in Diabetes, Nutrition Rev. 6:257 (Sept.) 1948.

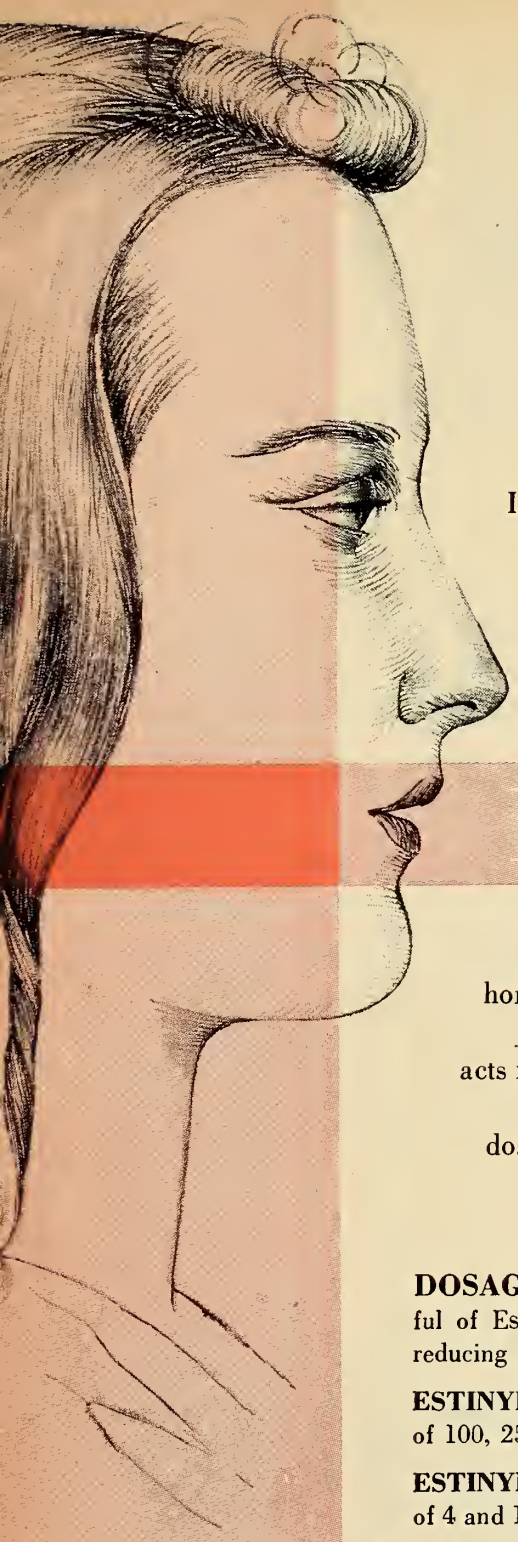
[2] Diabetes and Arteriosclerosis in Youth, Editorial, J.A.M.A. *135*:1074 (Dec. 20) 1947.

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*Beams, A. J., and Endicott, E. T., Histologic changes in the livers of patients with cirrhosis treated with methionine, Gastroenterology 9:718-735 (Dec.) 1947.

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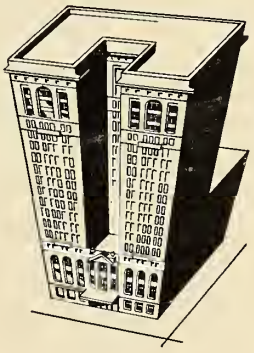
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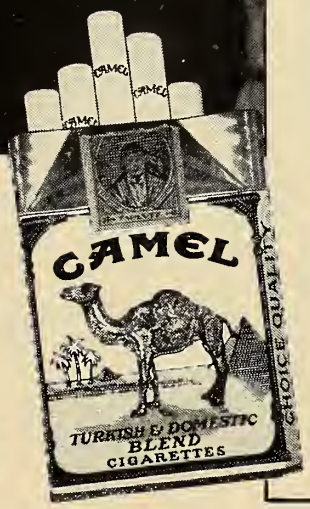


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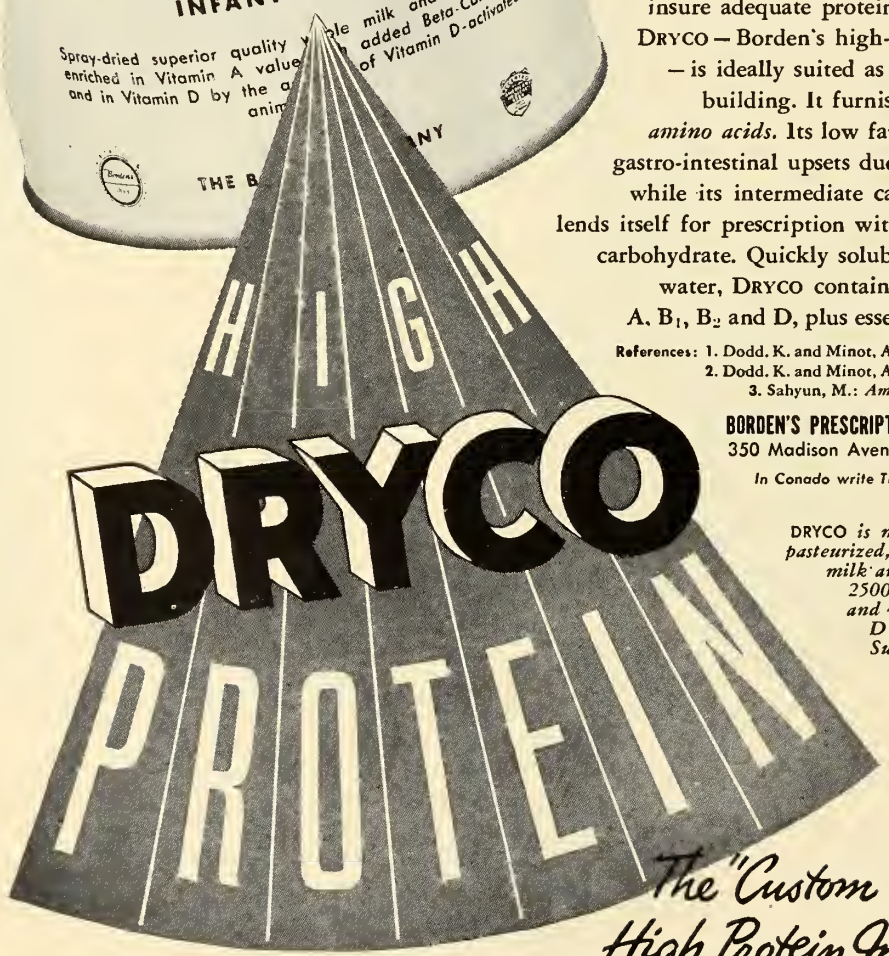
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References: 1. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:442, 1936.
2. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:452, 1936.
3. Sahyun, M.: *Am. J. Dig. Dis.*, 13:59, 1946.

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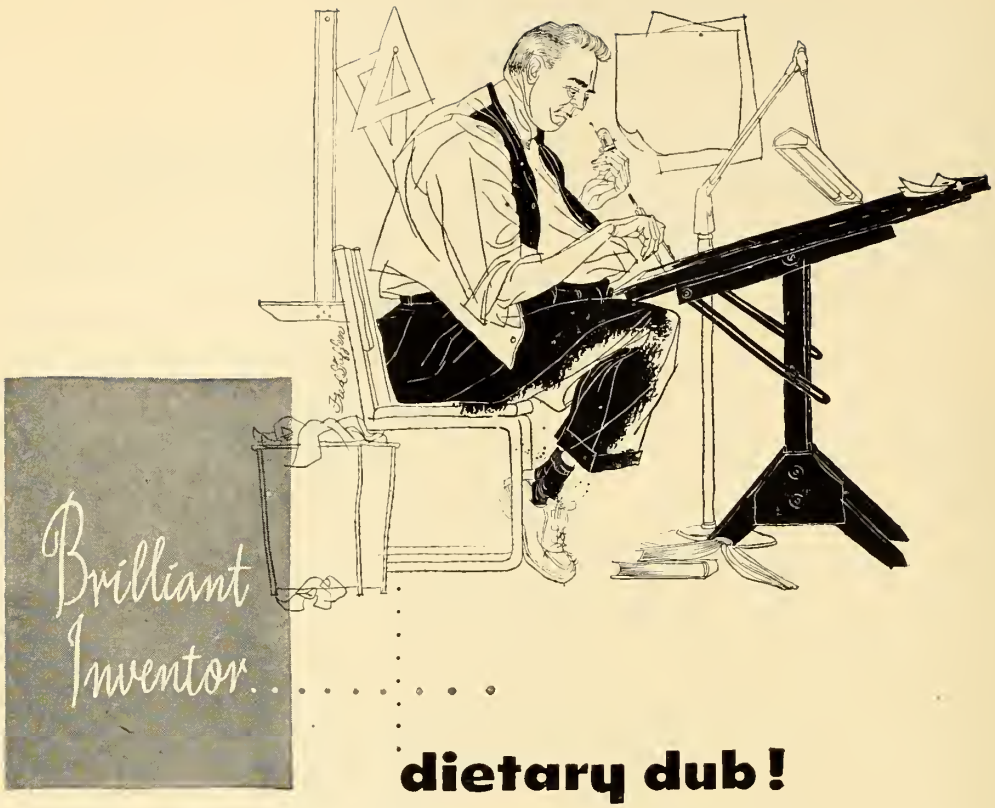
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Discussing the general treatment of low back pain in a recent article, an orthopedic surgeon* comments on supports (among other items) as follows: "The second remedy tried by time is further rest provided by support after the patient gets out of bed. Various corsets, braces, and casts have been used and the one criterion is that they be well fitted and do the work intended."



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**Hugh T. Jones, M.D.*
Low Back Pain from the Orthopedic Standpoint
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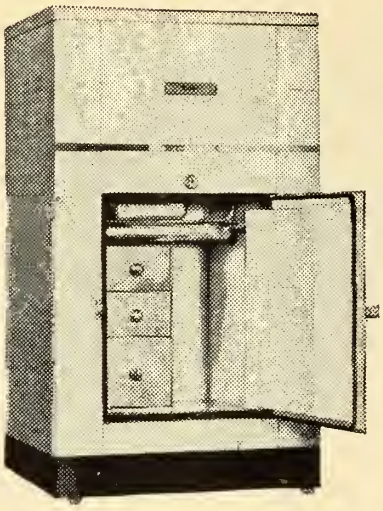
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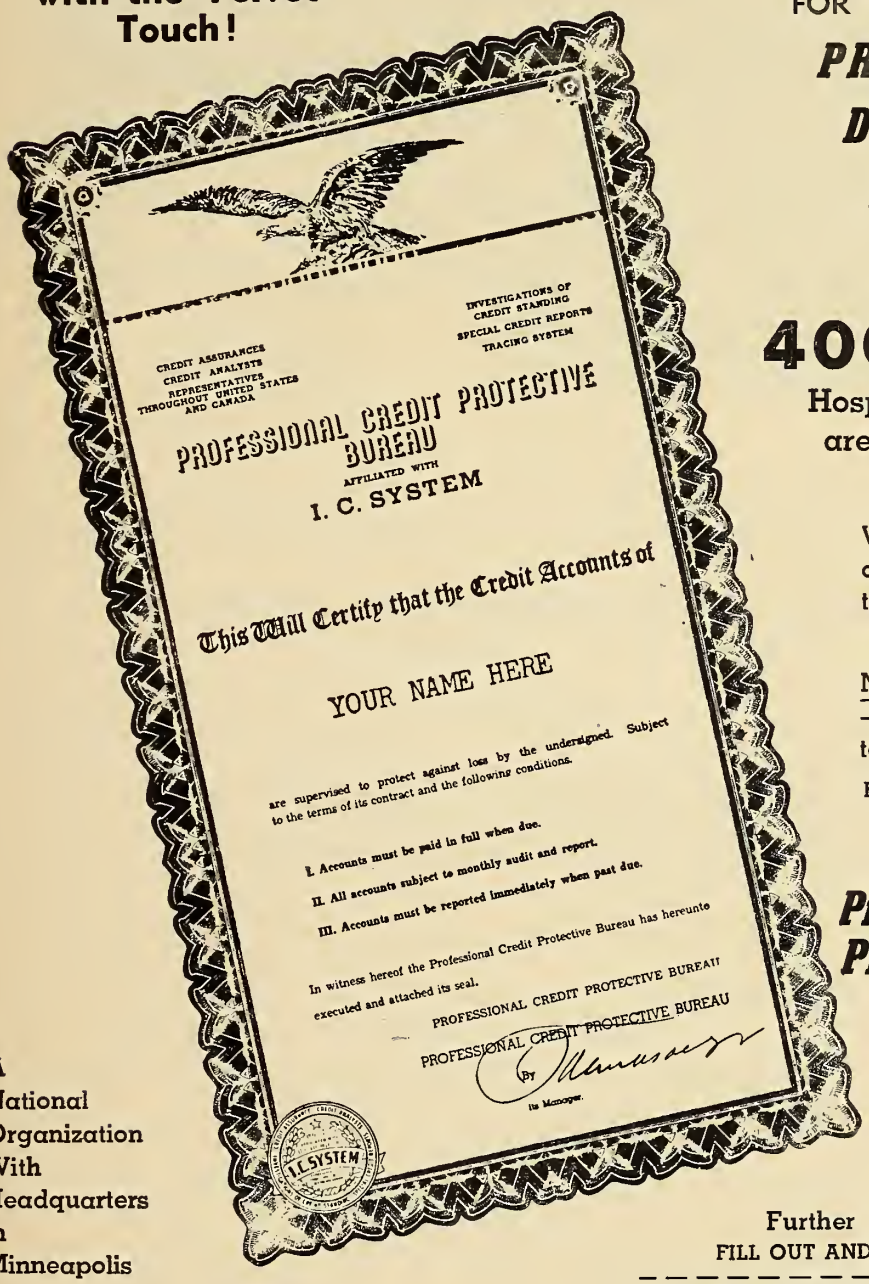
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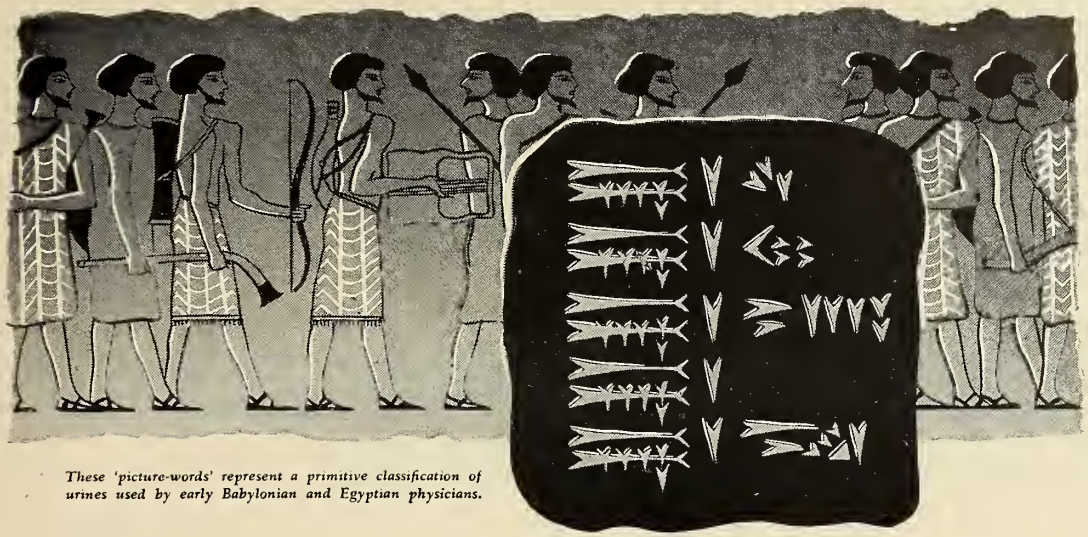
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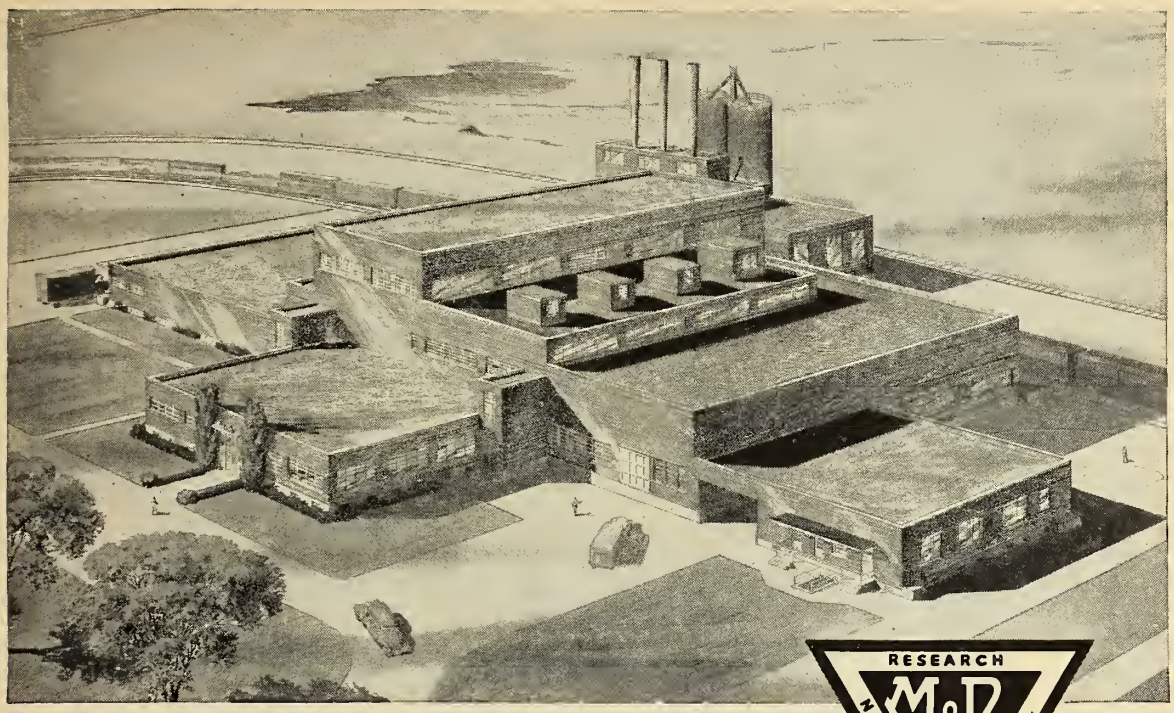
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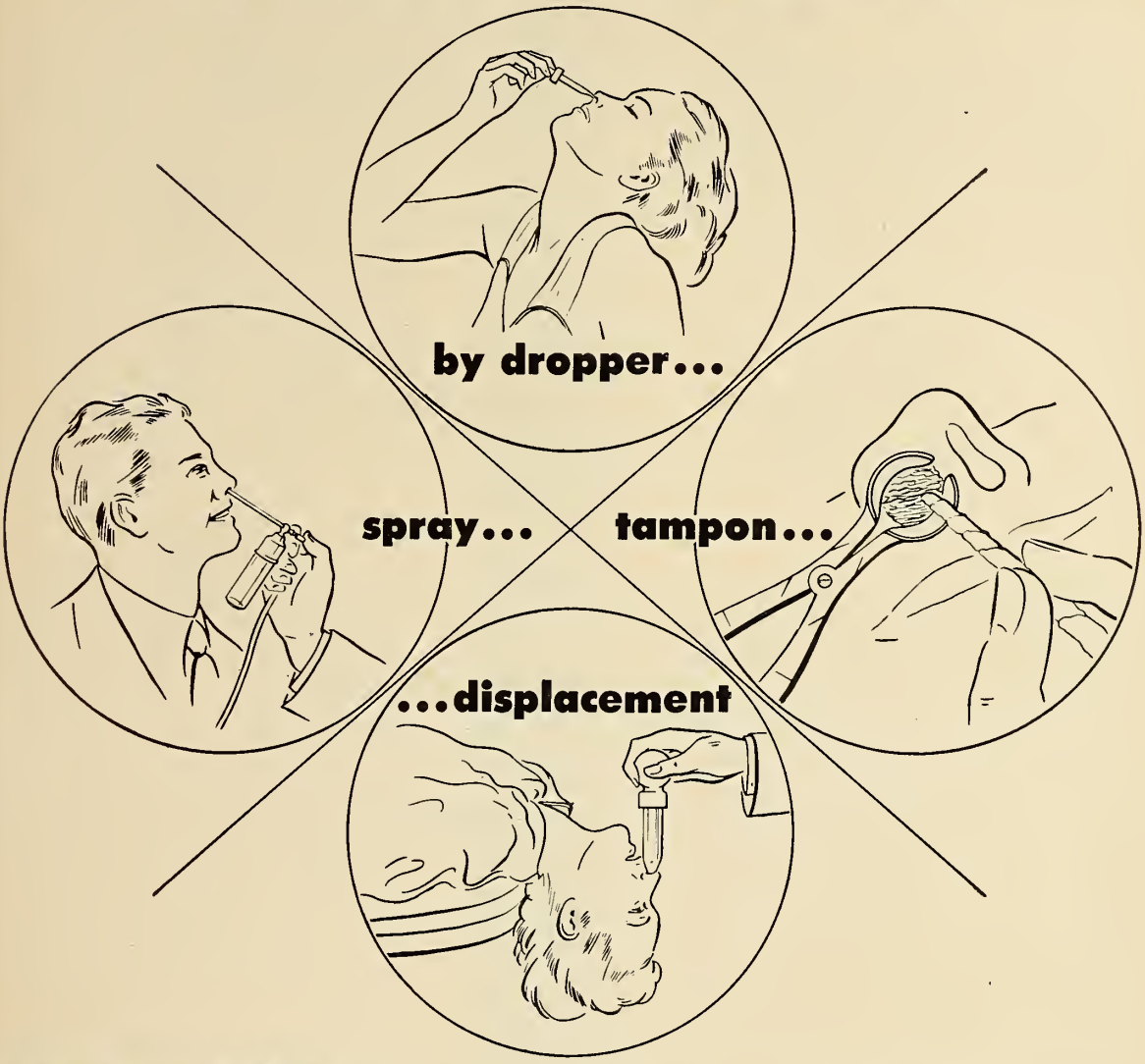
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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 32 January, 1949 No. 1

THE ROLE OF X-RAY PELVIMETRY IN OBSTETRICS

PAUL C. HODGES, M.D.
Chicago, Illinois

MOST American radiologists of my vintage knew Russell D. Carman personally, but through quirks of circumstance I was denied that pleasure. When I first visited the x-ray department at the Mayo Clinic in the winter of 1911-12, Carman had not yet come, and by the time I worked as a student assistant to Walter Mills in St. Louis in 1916, Carman had left that city and his association with Mills to go to Rochester. Following the first World War, my home was outside the country for seven years, and in 1926, before I returned to the United States, Carman died of the very disease that had been his special field of study.

Like radiologists everywhere, I have been influenced strongly by the work of this great exponent of our profession, and I am honored indeed to be invited to give one of the lectures in this series that was created to do honor to his memory.

Pelvimetry

X-rays have been available to physicians for more than half a century and, of course, geometry is some twenty-two centuries old; but though x-ray pelvimetry requires only simple geometry applied to quite ordinary looking pelvic roentegenograms, it has not yet come to occupy a place of much importance in obstetrics. To some extent, radiology is to blame for this fact, but according to Nicholson Eastman, who is chairman of the Department of Obstetrics at Johns Hopkins University, most of the blame attaches to the fact that obstetricians have been slow to accept pelvimetry of any sort and not sufficiently critical of such measurements as they have bothered to make.[2]

Hippocrates started the trouble by teaching that at term the fetus, by the use of his hands and feet, ruptured the membranes and worked his way through the birth canal under his own power, the principal maternal contribution being a separation of the symphysis, which allowed the birth canal to stretch as the fetus passed through it. As Eastman points out, "The . . . concept . . . that the pelvis is an elastic ring capable of enlarging as necessary to permit passage of the infant would naturally nullify . . . any thought that narrowness of the bony passages . . . could impede the birth of the infant. In other words, any case of difficult labor which in modern times would be attributed to contracted pelvis was ordinarily explained before 1700 on the grounds that the ligaments of the pelvis failed to stretch. With this idea of the mechanism of labor in mind, there could be no such thing as dystocia due to contracted pelvis as we understand the term, and pelvic mensuration would be . . . quite meaningless. It would have been . . . about as significant as measuring the lumen of the nonpregnant cervix in order to ascertain if a full-term infant could pass through it."

It is true that before 1600, Vesalius[3] and Arantius[1] had maintained dogmatically that neither in women nor in animals was there the slightest evidence of separation of the symphysis during labor, but in those days anatomy was anatomy

The Russell D. Carman Memorial Lecture presented at the annual meeting of the Minnesota State Medical Association, Minneapolis, Minnesota, June 7, 1948.

and obstetrics was obstetrics, and the old errors continued to be accepted in clinical circles for more than a hundred years.

In the year 1701, Hendrik Deventer recognized contraction of the pelvis as an important cause of dystocia, and in 1722 de la Motte named smallness of the inlet as the most important type of contraction, but it remained for Leveret in 1753 and William Smellie in 1754 to actually measure the pelvic dimensions of pregnant women and put those measurements to obstetrical use.

If Smellie's internal physical pelvimetry had remained alone in the field, the advent of x-rays in 1895 probably would have been followed by the rapid and widespread acceptance of x-ray pelvimetry, because obviously the patient would have been safer and the measurements more accurate if a beam of x-rays passing through the abdomen were substituted for a hand or caliper introduced through the vagina. Unfortunately, however, the year 1775 saw the introduction of Baudelocque's easier but far less dependable external pelvimetry. In retrospect, it is hard to understand the complacency with which obstetricians followed Baudelocque's teachings during the next century and a half without bothering to discover their inadequacy. They were accepted, however, and years later their acceptance delayed the development of x-ray pelvimetry because, unlike internal physical pelvimetry, external mensuration was easy and devoid of direct injury to the patient. Of course, it had one overwhelming fault, namely, failure in many cases to give accurate information as to the size of the birth canal, but it took Baudelocque's followers 150 years to discover that fault.

A most important factor in exposing the inadequacy of external pelvimetry has been the introduction of x-ray measurement, and obstetricians have been as active as radiologists in this work. In many localities, however, the radiologist is not equipped for pelvic measurement, and, on the other hand, one occasionally finds overenthusiastic x-ray workers who place too much emphasis on x-ray pelvimetry and underestimate the importance of good obstetrics. The pregnant woman who receives the care of a competent obstetrician and also a competent radiologist is twice blessed; she who has an experienced obstetrician but no radiologist at all has little to fear in most cases; but unfortunate indeed is the one whose obstetrician is incompetent regardless of the quality of the radiology that may be available to her.

While, in the main, radiology has played a minor role in the practice of obstetrics, it is important to note that in the United States alone there are several centers where x-ray pelvimetry has been employed skillfully and freely for many years. As to methods, surely there is no dearth. Some hundreds have been described, and there is a new flock each year, but all can be reduced to one of four fundamental approaches, and most allegedly new methods are really rediscoveries of old ones.

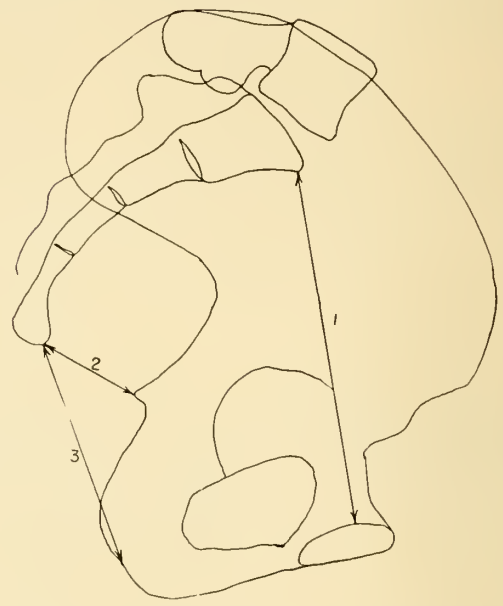


Fig. 1. Pelvic dimensions seen in the lateral view. (1) AP diameter of inlet. (2) Posterior sagittal of mid pelvis. (3) Posterior sagittal of outlet.

At the Chicago Lying-In Hospital we are engaged in a project calculated to answer such questions as:

1. Should x-ray pelvimetry be included as part of the routine examination of all primiparas?
2. If not, then what are the clinical criteria that call for it?
3. What pelvic dimensions should be measured?
4. What is the normal range of these dimensions?
5. How much below normal must these dimensions fall before the obstetrician is warranted in foregoing a test of labor and proceeding directly to surgical delivery?

A thousand consecutive primiparas are being examined by us; several different physicians and

technicians are engaged in the work, and we are measuring the pelves as completely as possible. Under such conditions, accuracy and objectivity are essential, and the expenditure of considerable

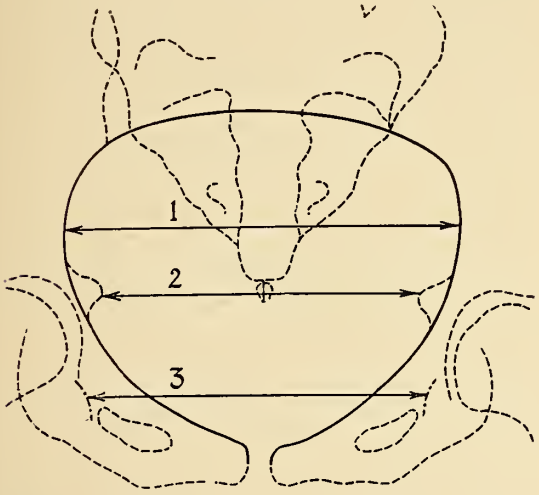


Fig. 2. Pelvic dimensions seen in the frontal view. (1) Transverse diameter of inlet. (2) Transverse diameter of mid pelvis. (3) Transverse diameter of outlet.

time and money upon special equipment is justifiable and even actually economical. I shall have failed in one of the purposes of this talk, however, if I lead you to believe that elaborate special equipment is essential to good work in those laboratories in which pelvimetry is done only occasionally.*

Pelvic Dimensions Seen in the Lateral View

In an ordinary lateral roentgenogram (Fig. 1) the end points of three important obstetrical diameters can usually be made out; but because of the phenomenon of divergent distortion, measurements of the images of these diameters are greater than the diameters themselves. The diameters in question are:

1. The obstetrical conjugate, which is measured from the sacral promontory to the most prominent point on the posterior surface of the pubic symphysis.

2. The posterior sagittal of the mid-pelvis, which is measured from the mean position of the images of the tips of the two spinous processes to the nearest point on the sacrum.

3. The posterior sagittal of the outlet, which is measured from the mean position of the posterior surfaces of the right and left ischial tuberosities to the nearest point on the sacrum.

*As presented at the June meeting, this portion of the paper was followed by the showing of twenty-eight lantern slides and a discussion of the fundamental aspects of many of the pelvimetry methods that have been published from time to time. In the present publication only three of the lantern slides are reproduced (Figs. 1, 2 and 3), and description of technical details has been reduced proportionately.

Pelvic Dimensions Seen in the Frontal View

In the frontal view (Fig. 2), that is, in a roentgenogram made with the patient lying on her back, three more significant pelvic diameters can be seen:

1. The transverse diameter of the inlet.

2. The interspinous diameter, which is the transverse diameter of the mid-pelvis.

3. The intertuberous diameter, which is measured between the right and left crescentic lines which represent the vertical medial surfaces of the right and left ischial tuberosities.

This latter is the transverse diameter of the outlet.

In order to measure these six dimensions in laboratories where there are only occasional calls for pelvimetry, my own preference is to make a single lateral 10-inch by 12-inch roentgenogram that carries the image of an isometric scale and a pair of stereoscopic frontal 10-inch by 12-inch roentgenograms in which the amount of the tube shift (K) is known and which carry register marks so that the films can be superimposed for the measurement of parallax. The films themselves can be made by any x-ray technician using any type of commercial x-ray equipment, and only two special accessories are required:

1. An isometric scale. This is a radiotranslucent rod or strip about 20 cm. long and calibrated at ½ cm. intervals by embedded lead shot or other opaque markers. The scale must be provided with a suitable mount so that it can be stationed between the x-ray tube and the film exactly in the mid-plane of the patient's body. Several commercial scales have been advertised, and innumerable homemade scales have been published.

2. A register marker. For convenience, we designate as the optical center of a roentgenogram that point near the center of the roentgenogram which lay perpendicularly below the target of the x-ray tube when the target was in its mean position midway between the extremes of the stereoscopic shift. Since cassettes fit loosely into grid trays, grids fit more or less loosely into the tracks in which they run, and films fit loosely into cassettes themselves, it follows that the optical centers of a pair of stereoscopic roentgenograms seldom coincide exactly with their geometric centers and a marker of some sort is necessary if the optical centers are to be identified. A satisfactory and inexpensive register marker can be prepared from a sheet of tempered masonite ¼" thick, 20" long and as wide as the x-ray table that is to be used. This sheet must be equipped with lugs or clips

or clamps by means of which it can be attached quickly and securely to the table top. The details of design will vary with the particular apparatus with which it is to be used, but any qualified x-ray serviceman should be able to make a marker suitable for his com-

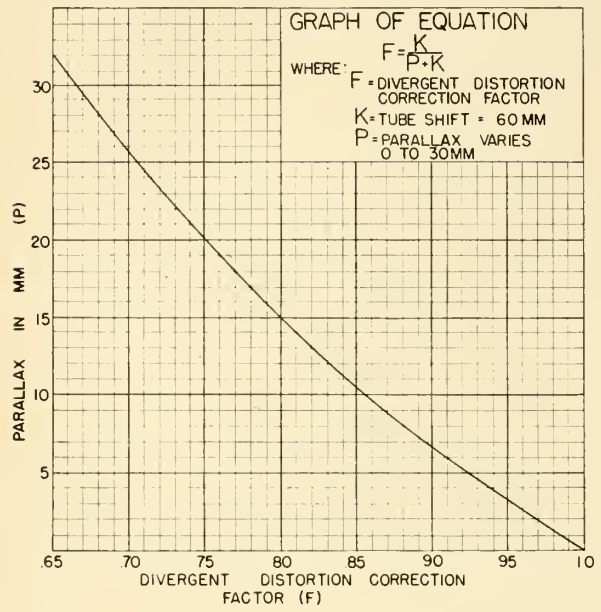


Fig. 3. Graph for obtaining divergent distortion correction factor (F) from measured parallax (P) in a pair of stereoroentgenograms made with a tube shift (K) of 60 mm.

pany's equipment. Embedded in the masonite so that their crossing lies perpendicularly beneath the mean position of the target of the x-ray tube are two 10-cm. cross wires made of approximately 20 gauge lead fuse wire.

Making the Stereoscopic Frontal Films

Attach the register marker to the x-ray table and lock the tubestand in position so that the mean position of the target is perpendicularly above the center of the cross wires. Lock the grid in position so that the center of the grid tray lies perpendicularly beneath the center of the cross wires. These spatial relationships are critical but once they have been established, preferably with the assistance of a machinist, marks can be filed or sawed or stamped into the apparatus so that for subsequent examinations the setup will be simple and easy. The height of the target above the film, or in other words the target-film distance, is not a factor in the accuracy of the measurement but is determined by the radius of the grid that is used—in most American equipment, 36 inches.

Shift the tube away from its mean position as far as it will go toward the back of the table.

Work sheet for obtaining seven points on the curve defined by the equation, $F = \frac{K}{P + K}$

Where K = 60 mm.
and P varies from 0 to 30 mm.

Where	P = 0	$F = \frac{60}{0 + 60}$	$= \frac{60}{60}$	= 1.000
Where	P = 5 mm.	$F = \frac{60}{5 + 60}$	$= \frac{60}{65}$	= 0.923
Where	P = 10 mm.	$F = \frac{60}{10 + 60}$	$= \frac{60}{70}$	= 0.857
Where	P = 15 mm.	$F = \frac{60}{15 + 60}$	$= \frac{60}{75}$	= 0.800
Where	P = 20 mm.	$F = \frac{60}{20 + 60}$	$= \frac{60}{80}$	= 0.750
Where	P = 25 mm.	$F = \frac{60}{25 + 60}$	$= \frac{60}{85}$	= 0.706
Where	P = 30 mm.	$F = \frac{60}{30 + 60}$	$= \frac{60}{90}$	= 0.666

Place a 10-inch by 12-inch loaded x-ray cassette in the grid tray and have the patient lie supine on the table with the center of the pelvic inlet approximately over the center of the film. Secure her in place by means of a compression band. Now make the first exposure. Then shift the tube forward through its mean position as far as it will go in the forward direction, insert the second film and make the second exposure. Note that the tube shift should be across the midline of the patient. In most apparatus this will mean that it is also across the strips in the grid, which makes for slightly greater absorption in the grid than when the shift is longitudinal. This loss by absorption is negligible, however, and, as we shall presently see, transverse shift has an important advantage in the measurement of the transverse diameter of the inlet. The exact amount of the stereoscopic shift (K) does not affect the validity of the measurement, provided (a) it is parallel to the plane of the film and always of a known and constant amount, and (b) that the parallax graph has been drawn for the particular tube shift that is being used.

The graph illustrated in Figure 3 has been drawn for a tube shift (K) of 60 mm. and the work sheet shows how the seven points on the curve were established. If the shift available in a particular x-ray apparatus cannot be adjusted until it is exactly 60 mm., one may draw a new curve through seven new points obtained from a work sheet in which the new K (measured in mm.) is substituted for 60 mm.

Work-up of Frontal Films

In the completed films, identify the right and left margins of the pelvic inlet, the right and left ischial spines and the right and left ischial tuberosities, and by means of a small sewing needle make holes in the film to identify these six points in both of the films. Now superimpose the films so that the two shadows of the cross wires coincide and passing the needle point through the holes in the front film make six more holes in the rear film. The rear film now has two needle holes for each of the six anatomical parts in question and the measured distance between the pairs of holes constitutes the parallax or P for each of these points. From the parallax graph (Fig. 3) determine the correction factors for the right and left ends of the pelvic inlet, add the two factors together and divide by 2 to obtain the mean factor. Measure the gross transverse diameter on both films, add the two diameters and divide by 2 to obtain mean gross transverse diameter. Multiply mean gross transverse diameter by the mean correction factor for this diameter, thus obtaining the net or actual transverse diameter. By similar means obtain net interspinous and net intertuberous diameters.

The following are probably not far from the average normals for these three dimensions:

Transverse diameter of inlet	13.5 cm.
Interspinous	10.5 cm.
Intertuberous	10.0 cm.

Making the Non-Stereoscopic Lateral Film

Lock the tube at the mean position midway between extremes of the stereoscopic shift so that the target lies perpendicularly above the center of the cross wires in the marker.† Arrange the patient on her side on the x-ray table with the center of the pelvic inlet approximately above the center of the film and secure her with a compression band. Fix the isometric scale in position so that it is close to the patient's back, parallel with the plane of the film and in the plane of the spinous processes and make a single exposure.

Work-up of the Lateral Film

In the completed film, set calipers on the obstetrical conjugate, and then transferring them to the image of the isometric scale, read the separation of the caliper points in half centimeters and estimated smaller fractions of a centimeter. By the same means, measure posterior sagittal of the mid pelvis and posterior sagittal of the outlet.

The following are probably not far from the average normals for these three dimensions:

Obstetrical conjugate	10.5 cm.
Posterior sagittal of mid pelvis	4.0 cm.
Posterior sagittal of outlet	5.0 cm.

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1. Arantius, Julius Caesar: De Humano Foeta Liber.
2. Eastman, Nicholson J.: Pelvic mensuration. A study in the perpetuation of error. Obst. Gynec. Survey, 3:301-321, (June) 1948.
3. Vesalius, Andreas: Hum. Corp. Fabrica. Chapter 39.

†The marker is essential for the frontal films but merely convenient for the lateral.

SAN FRANCISCO DOCTOR PRESENTS HIS OWN PROGRAM

In this day and age when everybody is talking himself hoarse about medical plans and programs, Dr. Anthony B. Diepenbrock of San Francisco comes up with his own 13-point health program:

1. Continue to sit on your fat derriere and do nothing.

2. Be apathetic and, like 5,000,000 registered Republican voters who failed to vote, do not bother to make your opinion known. If you think, as they did, that your opinion or your vote is not worth anything, the opposition will agree with you and act accordingly.

3. Write an occasional letter to your congressman, tell him off, and then explain proudly to the interns in the surgical dressing rooms how smart you are and what a stinker your congressman is.

4. Tell everybody you see that the gag is up, and we might as well prepare for the inevitable.

5. Moan and groan and issue explosive and unprintable epithets.

6. Refer to your medical leadership as a group of impotent, ineffective and bumbling ignoramuses.

7. Make speeches before sympathetic lay audiences, and convert those who already believe in free enterprise.

8. Don't bother to tell your county society heads, your state society heads, or your national association heads what you want them to do. Expect them to find a way for you without your guidance.

9. Scream about high medical society dues and forget that our friends in the trades unions demand many times what we pay: in other words, make the situation as difficult as possible, then grumble about it.

10. Oppose any program developed by the majority of your colleagues because it demonstrates your superior wit and your general greatness.

11. Remain superbly and learnedly dignified when Joe Doakes asks why you oppose state medicine. Brush him aside with any insult you can think of.

12. Don't bother to use the selling methods which actually bring messages before the public. Continue to depend on occasional radio feature programs. Billboard advertising, newspaper advertising, national magazine advertising, radio advertising and above all, continuous and daily radio spot programs over national hookups and all such like are too commercial, too troublesome, to expensive and too undignified: don't use them.

13. Above all, disregard the "little guy"—the one with a vote. Tell him nothing; push him around. He doesn't know anything anyhow.—A.M.A. Secretary's Letter, November 29, 1948.

SURGERY OF THE VEINS OF THE LOWER EXTREMITY

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RAPID STRIDES have been made in recent years in the treatment of diseases of blood vessels. The surgery of arteries has received most of the attention in the surgical literature, whereas that of the veins has been neglected somewhat. The apparent lack of interest in this branch of vascular surgery, despite the frequency of disorders of the veins of the lower extremity, is perhaps due to the fact that the results of treatment of conditions involving them have been, for the most part, unsatisfactory. Furthermore, practically any major vein with the exception of the superior vena cava, the inferior vena cava proximal to the renal veins, the portal vein and the right renal vein may be interrupted without serious consequences, whereas the viability of a part supplied by a major artery is so dependent on the arterial blood supply that naturally much interest has developed in maintaining it.

The veins of the lower extremity consist of three separate groups.

1. The superficial veins, which lie between the skin and the deep fascia in the subcutaneous tissues. These consist of the internal or long saphenous vein, which runs upward in front of the internal malleolus along the inner side of the leg, passing behind the inner side of the knee and continuing up the thigh to enter the fossa ovalis just below the inguinal ligament to join the common femoral vein. The external or short saphenous vein extends from just below the external malleolus up the outer side of the ankle and along the mid-line of the calf, passing through the deep fascia usually near the lower end of the popliteal space to join the popliteal vein behind the knee. These two systems of veins intercommunicate through numerous of their branches, so that frequently pathological conditions of one may involve the other.

2. The deep veins of the lower extremity consist of the common femoral, superficial and deep femoral veins in the thigh. In the lower leg the posterior tibial, anterior tibial and peroneal veins join to form the popliteal vein at the knee.

3. The communicating system of veins. There are numerous communicating veins, which connect the deep system with the superficial ones. Normally these vessels contain valves which permit blood to flow only from the superficial to the deep system. The superficial and deep veins also contain valves at frequent intervals which normally permit blood to flow towards the heart.

The most common diseases involving these blood vessels are: (1) varicose veins of the superficial system; (2) thrombosis of the superficial or deep systems; (3) postthrombotic sequelae of the lower extremity secondary to incompetency of the venous valves of the superficial, deep and communicating systems of veins.

Varicose Veins

Varicose veins of the lower extremity are probably one of the most common of human ailments. The most frequent symptoms referable to varicose veins are pain, dermatitis, ulceration, faintness due to the reduced circulating blood volume when the patient assumes an erect position because of pooling of the blood in this large stagnant venous reservoir, and, finally, the cosmetic appearance, considered by some female patients as a very important symptom. Varicose veins of the lower extremity develop because of dilatation —that is, an increase in the diameter—of the saphenous vein from the hemostatic pressure of blood resulting from man's erect position. This results in incompetency of the venous valves, due to incomplete apposition of the valve leaflets since they do not increase correspondingly in size. The process, as a rule, commences in the upper portion of the thigh at the saphenofemoral junction and extends distalward. If treatment is not instituted the whole system of superficial veins may become varicosed in time because of the lack of support from the fascial covering, such as encases the leg, which prevents the deep veins from dilating.

A number of tests have been devised to de-

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termine which system of veins is involved in a given case of varicose veins. The most useful one of these is the so-called Trendelenburg or tourniquet test. The author's modification of this test is performed by having the patient lie down. The extremity is elevated to empty the veins of blood, then a rubber venous tourniquet is placed around the leg just below the knee (Fig. 1). The patient then stands erect. Careful observation of the veins distal to the tourniquet is made. If slow filling of them with blood occurs before removing it and rapid filling after it is removed, the varicosities for the most part are due to incompetency of the superficial system of veins. Another satisfactory method of testing this system of veins is by finger pressure over the internal saphenous vein at the knee and the external saphenous vein in the popliteal space. It is possible by this means to determine whether one or both of these veins is incompetent. If the veins fill rapidly as soon as the patient assumes the erect position with the tourniquet placed below the knee, it is proof that the deep and communicating systems of veins have incompetent valves. As a rule when this observation is made it will be found frequently that the superficial system is incompetent as well. A previous history of a deep venous thrombosis of the extremity is usually obtained with these findings.



Fig. 1. Tourniquet test to determine the competency of the valves of the superficial, deep and communicating systems of veins. The absence of filling of the varicose veins distal to the tourniquet indicate the valves of the deep and communicating veins are competent, and that the varicose veins are the result of incompetent valves in the saphenous veins. (See Fig. 4A for the extent of the varicose veins.)

Treatment

Numerous forms of treatment for varicose veins have been devised. It appears from the surgical literature that one method is in vogue for a short period of time and then is discarded for another. In fact the treatment has apparently gone around in circles, coming back many years later to one of the earlier forms of treatment. For example, at the Massachusetts General Hospital from 1835 to 1845, numerous patients were admitted to the surgical wards for the injection of their varicose veins with a solution of ferric chloride. The results of this form of therapy were never published and presumably it was abandoned because of serious complications. This treatment apparently was then discarded but rediscovered around 1925 to 1930 and it again became the recognized form of therapy, except a different type of sclerosing solution was used.

In the early part of this century various types of surgical operations were devised. The most commonly practiced one was called the stripping operation. Babcock[2] devised an intraluminal type of stripper, whereas Mayo[13] described a perivenous type. Both had their advocates but the intraluminal type has proven to be the more effective. This form of therapy was discarded in the late 1920's because of a definite mortality rate from sepsis and pulmonary embolism, and the introduction of the injection therapy which could be performed on the ambulatory patient without hospitalization. It soon became apparent that this treatment was unsatisfactory from the patient's point of view because of the high incidence of recurrence of the varicose veins. In addition the treatment was unsatisfactory in many cases because of the discomfort and incapacitation to the patient. Due to the temporary benefit from this form of therapy, a high interruption of the saphenous vein at the saphenofemoral junction with a retrograde injection of a sclerosing solution at the time of the operation then came into vogue. Many surgeons still perform this type of procedure, but it also has been found to

be inadequate because of a high recurrence rate and in some cases deaths have occurred due to the production of deep venous thrombosis with secondary pulmonary embolism. The recurrences

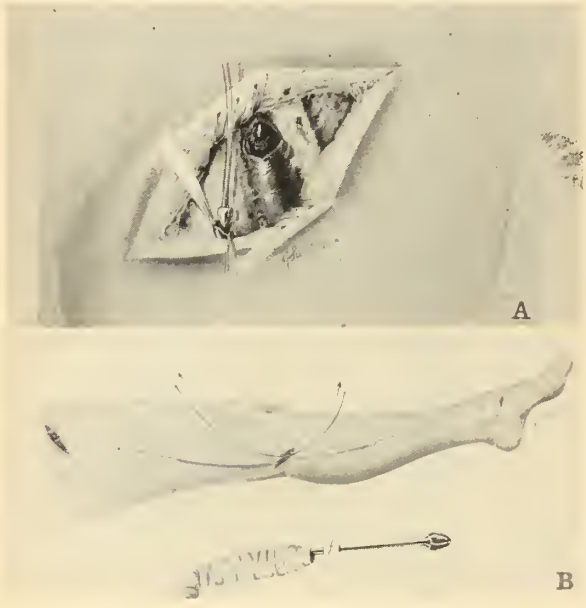


Fig. 2. The technique of stripping the internal saphenous vein. (*a*) The vein has been ligated and divided at the sapheno-femoral junction. (*b*) One stripper is passed distalward to the knee level and this section stripped from above downward after ligating the vein to the stripper at the proximal end. A second stripper is inserted upward from the ankle, and the vein in the lower leg is stripped up to the knee. The inset shows the saphenous vein folded accordion-like on the stripper. Large varices often invert in stripping, in which case they are more likely to break, necessitating additional incisions.

following this form of treatment occur chiefly because the sclerosing solution for the most part produces only a thrombus which later absorbs and the vein canalizes. In addition to thrombosing the superficial system of veins, frequently the communicating veins also are thrombosed. Edwards[6] has pointed out that the venous valve is damaged by venous thrombosis and becomes incompetent following canalization of the vein so that frequently the recurrences have been found due to the incompetency of communicating veins which, prior to the retrograde injection, had competent valves.

Because of these disadvantages in the treatment of varicose veins by injection, and the ligation and retrograde injection methods, a combination of ligation and stripping of the main trunk or trunks of the internal and external saphenous veins has been performed during the past decade in our clinic for patients with varicosities of the superficial veins. The procedure has been performed in over 500 patients without a death and deep thrombosis occurred only in one patient. The operation is performed under a general anesthetic, preferably ether, because it is a safe anesthetic. Since varicose veins are rarely a lethal disease, the safest method of anesthesia should be utilized. The internal saphenous vein is isolated, ligated and divided at the saphenofemoral junction proximal to its upper tributaries. An intra-

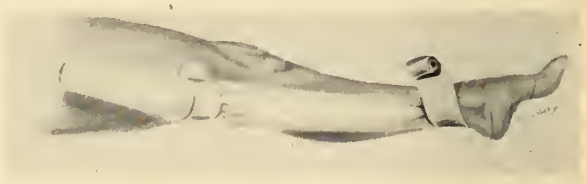


Fig. 3. Postoperative dressing. Small dressings are applied to the incisions, then a large gauze roll is held in place with three strips of adhesive tape over the course of the internal saphenous vein. The extremity is then wrapped snuggly with two 4-inch elastic gauze bandages from the toes to the groin to control bleeding from the tributaries of the saphenous vein. The bandages and gauze roll are removed in forty-eight hours.

luminal type of stripper is inserted into the proximal end of the internal saphenous vein and passed downward to just below the knee. The internal saphenous vein is then exposed just distal to the internal malleolus and another intraluminal stripper passed upward (Fig. 2). Occasionally it will go up a second trunk, which may extend as far as the upper third of the thigh. The vein is tied to the end of the stripper and then it is pulled out along with the stripper. It is preferable to strip the thigh section from the groin to the knee and the lower leg portion from the ankle to the knee. The patient is always in Trendelenburg position during the stripping procedure; that is, the feet and legs are at a higher level than the heart, to reduce the venous pressure and thereby minimize the bleeding from the tributaries of the main saphenous trunks which are torn but not ligated. If the vein breaks during the stripping process it may be necessary to make additional incisions to complete the removal of the veins. If the external saphenous vein is incompetent, the patient is placed in the prone position and the vein exposed just behind the external malleolus. The stripper is inserted from below upward to the popliteal space. Then through a transverse incision the proximal end of the main trunk is isolated be-

neath the popliteal fascia. It is ligated and divided at the saphenopopliteal junction. Great care should be exercised not to damage the posterior tibial and peroneal nerves, especially with metal retractors, while performing this part of the procedure. The distal end of the vein is tied to the stripper and the vein removed by stripping from the ankle to the popliteal space. The popliteal fascia should be sutured carefully to prevent herniation of the politeal fat, which, if it occurs, is very unsightly, especially in a woman's leg. A pressure dressing, consisting of a large gauze roll held in place over the course of the internal saphenous vein with a few strips of adhesive tape, is applied and then the leg bound with an elastic bandage from the toes to the groin (Fig. 3). The patient is made ambulatory on the first postoperative day, walking at least five minutes every two hours. The pressure dressings are removed on the second postoperative day and the patient may go home or remain in the hospital a few more days to have the skin sutures removed. The patients are not allowed to sit in a chair except for very short periods of time for at least a week following the operation because of the danger of deep venous thrombosis following the operative procedures on the lower extremities. Since all the dilated tributaries of the saphenous vein are not removed by this process of stripping, it is necessary to supplement this form of therapy with a few injections of a sclerosing solution. This is done in the office following the recovery from the operation.



Fig. 4. (*A*) A preoperative photograph showing bilateral varicose veins of the internal saphenous system of veins. The large tortuous variety in the left leg is not the main saphenous but an enlarged tributary. Note the pigment changes in the skin of the left lower leg in which previous ulcerations had developed.

(*B*) A postoperative photograph showing the same extremities 18 months after operation. The large tortuous varicosity in the left leg was excised in the thigh through three small transverse incisions since it is impossible to strip this type of vein because of its tortuosity and the fact it is so adherent to the skin. In addition the long saphenous veins were stripped from the groins to the ankles. One injection of a sclerosing solution was given postoperatively, in the right leg and four in the left leg. Note the absence of varicose veins and the improvement in the pigmentation of the skin of the left lower leg.

The results of this type of therapy have been very gratifying (Fig. 4) but no patient is promised that his varicose veins will be cured. He is warned that others may develop, which may need subsequent injection. An occasional patient with recurrent or persistent varicose veins will be found in which a second trunk of the internal saphenous vein or an incompetent external saphenous vein has been overlooked, in which case

another surgical procedure should be performed to remove these vessels.

Deep Venous Thrombosis of the Lower Extremity

Thrombosis of the deep veins of the lower extremity is a serious complication which develops most frequently after major surgical operations, trauma to the lower extremity, pregnancy, and serious illnesses such as heart disease, pneumonia, and typhoid fever. The relationship of deep venous thrombosis to pulmonary embolism has long been established. In 95 per cent of the cases it is believed approximately all pulmonary emboli can be traced to the leg veins.[7] Early ambulation and the use of the anticoagulants, dicumarol and heparin, are effective measures to prevent this condition. The accepted method of treating deep venous thrombosis in our clinic at the Massachusetts General Hospital once it has developed is to interrupt the femoral veins in the groin. We believe that if a diagnosis of deep venous thrombosis of the lower extremities is made, or if a patient has had a non-lethal pulmonary embolus, irrespective of whether or not the legs show signs of venous thrombosis or phlebitis, this is the best method of therapy.[1] It prevents further embolisms in the majority of cases and at the same time it protects the extremities from the post-thrombotic sequelae seen so frequently in the patient who has not had the femoral veins interrupted.

This method was first described by Homans[8] in 1934. During the past decade we have interrupted the femoral veins in 2,131 patients up to January, 1948. No serious sequelae have resulted from the operation and only in a few instances has an ulcer developed in the extremity. It is believed many lives have been saved and the morbidity of the disease greatly reduced. The operation of femoral vein interruption is a surgical procedure which can be performed readily, using local infiltration of a 1 per cent procaine solution. It is imperative, however, that the surgeon should be thoroughly familiar with the surgical anatomy of the blood vessels in Scarpa's triangle. The common femoral vein is a continuation of the external iliac vein. It extends distalward from the inguinal ligament for about 5 to 7 centimeters, where it bifurcates into the superficial femoral vein and the deep femoral vein. The former extends down Hunter's canal with the superficial femoral artery to become the popliteal vein and the deep femoral drains the blood from the posterior muscles of the thigh. The internal saphenous vein is the most proximal tributary of the common femoral vein and between it and

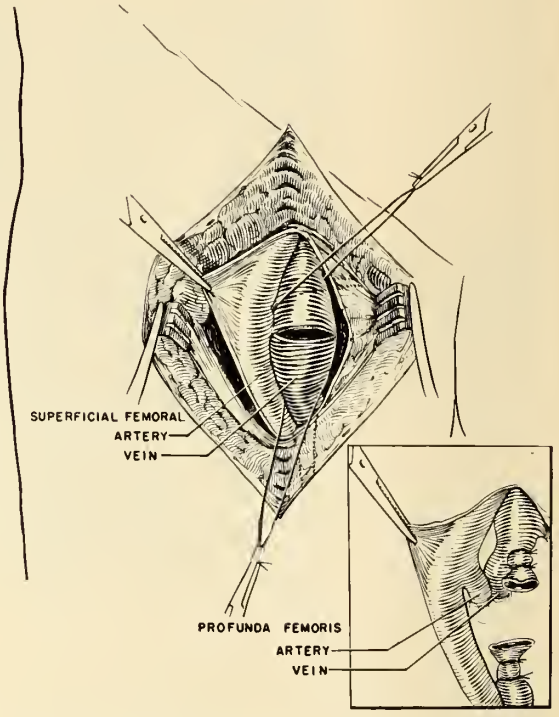


Fig. 5. Interruption of the superficial femoral vein. This artist's drawing shows the exposure of the right superficial femoral vein using a vertical incision, the upper end commencing at the groin crease. The dilatation of the vein localized the junction of the superficial and deep femoral veins. The femoral artery is retracted lateralward. The incision in the vein is indicated and should always be transverse. The inset shows the divided superficial femoral vein with both ends doubly ligated. The ligatures on the proximal end should be placed as close to the deep femoral vein as possible so that a blind segment of vein is not formed in which a secondary thrombus may develop and from which a pulmonary embolus might occur.

(Courtesy Mason, Robert L., and Zintel, H. A.: Preoperative and Postoperative Treatment. By permission of W. B. Saunders Company, publishers, Philadelphia.)

the origin of the deep femoral vein several other vessels arise from it, the largest of which are the medial and lateral femoral circumflex veins.

The common femoral vein should never be interrupted proximal to the saphenofemoral junction, nor should it and the internal saphenous vein be interrupted in the same extremity. This is because the collateral circulation at this level in some patients is so meager that serious results to the extremity have been observed and reported, one by Dennis[5] when the interruption was at this

level. Interruption of the superficial femoral vein just distal to the origin of the deep femoral has been found to be the safest level to interrupt the deep venous system in this region (Fig. 5). This is the routine procedure in our clinic if there is no thrombus encountered and if the patient can become ambulatory immediately after it is performed. If a clot is found in the common femoral it is better to interrupt the common femoral distal to the sapheno-femoral junction and proximal to the deep femoral vein (Fig. 6). This is a more difficult interruption because of the tributaries arising from it, which in most instances must be ligated separately, to give sufficient length of common femoral vein to safely ligate and divide. However, it protects the patient from emboli which may arise from the deep femoral vein, a distinct possibility if a thrombus was found proximal to it. The clot should be removed both distal and proximal to the opening made in the common femoral vein (Fig. 6) by aspiration. From experience it has been found that this can be accomplished readily if the venous thrombosis has been detected early so that the patient's thigh has not been swollen for more than forty-eight hours. If it has been for a longer period, the clot will be found so adherent that it will be impossible to remove it. Under these circumstances if the patient has had a pulmonary embolus a more proximal interruption of the venous system at the level of the inferior vena cava should be performed. If no embolism has occurred, conservative measures are recommended.

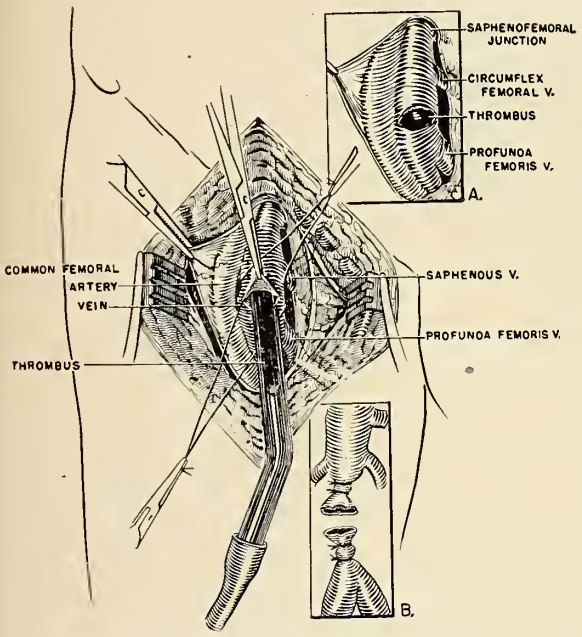


Fig. 6. Interruption of the common femoral vein with thrombectomy. An artist's drawing to show the exposure of the right common femoral vein. The upper end of the incision should be 2 cm. above the groin crease. The femoral artery is retracted lateralward. Two untied ligatures have been placed around the vein to control the bleeding after thrombectomy. The thrombus is removed by aspiration through a glass cannula. The proximal segment is always aspirated first. Inset A. shows the thrombus protruding through the transverse incision in the vein. Inset B. shows the completely divided vein with both ends doubly ligated with non-absorbable ligatures. The division is above the junction of the superficial and deep femoral veins.

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The following practical suggestions concerning femoral vein interruption are worth enumerating: The incision should be a vertical one over the course of the great vessels in Scarpa's triangle (Figs. 5 and 6). Serious injury to the femoral artery has occurred in other surgeons' hands when this cardinal principle has not been followed because of the difficulty in obtaining adequate exposure of sufficient length of these large blood vessels. Two traction ligatures should be placed around the femoral vein before it is opened in order to control the bleeding. The femoral artery in patients subject to this disease, since they are usually over forty years of age, is a friable structure. For this reason it should not be freed up and retracted with a rubber tube because this may be sufficient trauma to fracture its wall to produce arterial thrombosis with resulting gangrene of the extremity. It should be retracted by traction on the periarterial tissues (Figs. 5 and 6). It is recommended that ligation and division of the femoral vein is preferable to ligation in continuity. This should be performed by ligation of each end with a primary ligature of non-absorbable material such as cotton or silk and a secondary transfixion ligature of the same material in the cuff of the vessel distal to the former.

Interruption of the venous system at a higher or more proximal level is indicated in a few instances. This may be done by ligation of the common iliac veins or the inferior vena cava distal to the renal veins. The latter is more practical since the large veins from both the lower extremities and the pelvis may be interrupted by ligation of this single large blood vessel. In

addition it can be performed through one incision, whereas bilateral common iliac vein interruptions necessitates two separate incisions, one in each lower quadrant.

centimeters above the umbilicus is recommended for ease of exposure. The rectus muscle is retracted lateralward, the peritoneum with its contents and the ureter are retracted medialward to

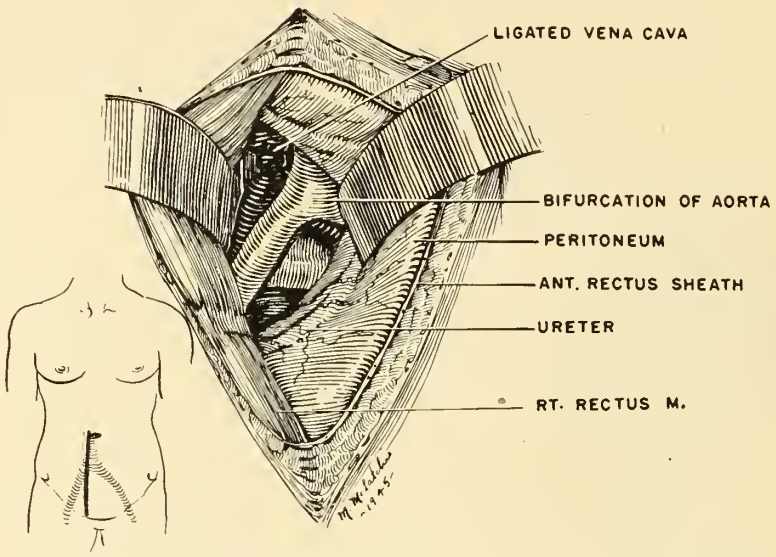


Fig. 7. Interruption of the inferior vena cava. An artist's drawing to show the extraperitoneal exposure and ligation in continuity of the inferior vena cava using a right paramedian incision. The rectus muscle is retracted lateralward and the ureter, peritoneum and its contents medialward. The incision extends from the pubis to about 5 centimeters above the umbilicus. For ligation, we use two non-absorbable ligatures of silk or cotton.

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Ligation of the inferior vena cava in our clinic is restricted to a few patients. It is recommended: (1) in those patients who develop septic non-fatal pulmonary emboli arising from a septic thrombophlebitis of the pelvic veins; (2) in those who have had femoral vein interruption and dicumarol therapy but continue to have pulmonary emboli; and (3) in a rare instance of phlegmasia alba dolens complicated by non-lethal pulmonary embolism. It has been performed on sixteen patients in our clinic during the past ten years. When compared to femoral vein interruptions in 2,131 patients during the same period, the relative infrequency of it in our clinic can readily be seen. In a few instances of fatal pulmonary embolism following femoral vein interruptions, it is believed that the lives of some of these patients could have been saved by the timely interruption of the inferior vena cava. An extraperitoneal exposure of it is preferable to a transperitoneal one because it produces less surgical shock. A long right paramedian incision extending from the symphysis pubis to about 5

expose the bifurcation of the inferior vena cava (Fig. 7).

Interruption of it is performed by double ligation of it with strong non-absorbable material such as braided silk. The vessel is so large in diameter it would require freeing up too great a length of it to permit a safe ligation and division. Large veins in contradistinction to large arteries may be safely ligated in continuity, since their walls are less friable and the intraluminal pressure is much less. No serious sequelae have developed in our patients following inferior vena cava interruption, but it is believed the ones that have had it performed should be followed for a longer period before recommending the procedure except in the rare instance as already described. It should be pointed out that it is a major surgical operation compared to femoral vein interruption, and may carry a considerable mortality rate as evidenced by the results of Thebaut and Ward[14] who reported four operative deaths in thirty-six patients, a mortality rate of 11 per cent. When these figures are compared

to 2,131 patients who have had femoral vein interruptions in our clinic without a single operative death, it is obvious that this latter procedure is preferable in the average case of venous thrombosis of the deep veins of the lower extremities.

Postthrombotic Sequelae of the Lower Extremity

The most common postthrombotic sequelae of the lower extremity in order of frequency seen in eighty-four extremities were edema, varicose veins, pain, stasis dermatitis, stasis cellulitis and chronic ulceration. The treatment of these sequelae has baffled the medical profession for many years. None of them is a serious threat to the life of the patient, but many fortunes have been spent on inadequate treatment with little or no lasting benefit. The morbidity of them is high and if it were possible to estimate the time lost from work due to them it would undoubtedly be stupendous. It is believed, therefore, that radical surgical treatment, if it has any possibility of curing these conditions, should be performed.

The observation has been made that the postthrombotic sequelae except for pain and edema as a rule do not develop until the deep veins of the leg have canalized. Ulceration may occur even within a year of the original deep venous thrombosis but not before canalization of the deep veins. The observation that only in a rare instance, following therapeutic or prophylactic interruption of the femoral vein for thromboembolic disease, have the post-thrombotic sequelae developed, in approximately 2,000 patients who have had one or both femoral veins interrupted at the Massachusetts General Hospital in the past ten years, led the author to believe that interruption of this vein distal to the profunda femoris branch might benefit the postthrombotic sequelae. Buxton and Coller[3,4] and Homans[9] have also recommended this procedure. It is believed, however, in addition to interruption of the superficial femoral vein, the incompetent internal and external saphenous veins should also be removed by the method of stripping as already described. This form of treatment is recommended chiefly in those patients with early post-thrombotic sequelae, namely, pain, edema, varicose veins and beginning stasis dermatitis and was previously reported.[11] If, on the other hand, the condition has been long standing so that the extremity in addition presents marked dermatitis, stasis cellulitis and chronic ulceration, a still more radical form of surgical treatment may be indicated.



Fig. 8. Ligation of the communicating veins, excision of internal and external saphenous veins and fasciectomy. A longitudinal incision about one centimeter posterior to the tibia is made on the inner side of the lower leg from the knee to just below the internal malleolus. The medial group, or posterior tibial communicating veins, are ligated and divided. The deep fascia is divided at the posterior edge of the tibia to expose the internal saphenous vein, which is removed (*A*). The external saphenous vein is exposed by incising the deep fascia of the posterior skin flap and it also is excised (*B*). The sural nerve is carefully preserved. The saphenous nerve is usually removed with the internal saphenous vein. A large window of deep fascia is excised from the posterior flap. This gives lymphatic drainage to the subcutaneous tissues and permits easier closure of the wound. Interruption of the superficial femoral vein, ligation of the long saphenous vein at the sapheno-femoral junction and the stripping of it to below the knee should be done to complete the operative procedure in cases of post-thrombotic ulcers and induration of the lower leg. The ulcerations must be healed before performing this type of procedure.

Homans,[10] in 1917, described the method of excision of the chronic ulcer and most of the diseased skin around it, carrying the dissection

through the deep fascia down to muscle and periosteum, then applying an immediate split thickness skin graft to the raw surface. This method is still useful in some of the very old chronic ulcer cases but it leaves much to be desired as far as the cosmetic result is concerned, and in the cases in our clinic where this alone has been utilized, only 50 per cent have been cured. Interruption of the superficial femoral vein in these extremities has been found to be a valuable adjunct to this form of treatment. Recurrent ulcerations following the procedure have healed after superficial femoral vein interruption so it is now performed at the same time as the excision of the ulcer and the skin graft.

The author,[12] in 1938, described another method of treatment for this type of case which does not disfigure the extremity to the same degree as the excision and skin graft method. It has been modified somewhat since then with more satisfactory results. The procedure that is now recommended consists of interruption of the superficial femoral vein distal to the profunda femoris branch, ligation of the internal saphenous vein at the sapheno-femoral junction, stripping of this vessel in the thigh, ligation of the medial group of communicating veins of the lower leg through a long veritical incision extending from the knee to just distal to the internal malleolus, excision of the deep fascia on the posteromedial aspect of the lower leg and excision of the internal and external saphenous veins in the lower leg (Fig. 8). In order to prepare the extremity for this procedure, the ulcer is first healed, utilizing elastic adhesive bandages or an Unna's boot type of bandage. These are changed at weekly or biweekly intervals depending on the size of the ulcer. When the ulcer is epithelialized the patient is admitted to the hospital, where with bed rest and elevation of the extremity the condition of the skin is further improved. The operation is done under the protection of penicillin. Ether or spinal anesthesia is used. The femoral and saphenous veins are first interrupted in the groin, and the latter stripped down to just below the knee. The long vertical incision about 1 centimeter posterior to the tibia is carried down through the deep fascia. The large incompetent communicating veins arising from the posterior tibial vein are ligated and divided. The dissection is carried anteriorly over the tibia severing the attachment of the deep fascia to the bone. The internal saphenous vein is readily seen through the deep fascia. It is excised completely from the upper to the lower end of the incision by incising the deep fascia. The posterior skin flap is then raised and the short saphenous vein similarly removed. As large a section as possible of the deep fascia in the posterior skin flap is then excised. Care is taken to leave a small rim of it on the wound edge to aid in closing the wound with a layer of subcutaneous fascial sutures of fine chromic catgut. The sural nerve lying parallel with the external saphenous vein is preserved carefully. The excision of the deep fascia has a two-fold purpose. It permits closure of the long incision without tension and it reduces the amount of edema in the lower leg by giving better lymphatic drainage to the skin and subcutaneous tissues similar to the Kondoleon type of operation. After closure of the skin with fine interrupted silk sutures, a large gauze dressing is applied and outside this a plaster cast from the toes to the knee with the foot in ninety degrees dorsiflexion. Penicillin is continued postoperatively for five to seven days. The first dressing is done in ten days and if primary healing is obtained the patient is discharged home approximately two to three weeks after the operation with an elastic adhesive bandage over a large gauze dressing from the toes to the knee. This type of dressing is used for several weeks and then replaced with an elastic stocking or bandage until the edema has disappeared from the extremity. This may require from three to six months. The results by this method of therapy in the chronic indolent post-thrombotic ulcer cases have been found to be extremely gratifying both from the cosmetic standpoint and the healing of the ulcer.

Conclusions

1. The most common conditions of the lower extremities resulting from pathology of the veins are varicose veins, deep venous thrombosis and the post-thrombotic sequelae.

2. The surgery of these conditions, as performed in the Peripheral Vascular Clinic of the Massachusetts General Hospital, is reported.

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THROMBOEMBOLISM AND THROMBOPHLEBITIS

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THIS SUBJECT of thromboembolism and thrombophlebitis has received such recognition in the medical press the past two years that one can hardly pick up one of the better medical journals without finding an article on it. Many of these have been written by men of wide experience, and regardless of what one's own experience or opinions may be one must stop and consider the subject in the light of their reports.

There are few of us who cannot recall the sad details of the doctor's mother who went to a large clinic to have a hysterectomy by the best man obtainable and who died of a massive pulmonary embolus as she got out of bed on the ninth day postoperative, or the fine wife of one of one's best friends who had a similar accident after a simple ovarian cyst resection, or the man with a hernia to whom one said, "Don't worry, it is very simple and you have nothing to worry about at all. In fact it will be just a good rest in bed with pretty nurses about you." But he died of the embolus just as you left the room, having told him to "go on home and have a good time." Or the executive, fifty-five years old, who was advised to take a few days' rest in bed at home after overwork, but who had his embolus while reclining on the cot in the sun parlor. These occurrences come from my own personal experience, and the patients are just as *dead* as though they had been shot with a rifle.

Both clinically and pathologically phlebothrombosis and thrombophlebitis are in a sense one and the same thing. They both mean a closure of the vein lumen with a blood clot.[2,18] It is just a question of the degree of the inflammatory phase of the condition present. Phlebothrombosis means just a closure of the vein with a simple blood clot like a post mortem clot. It is not fixed to the vein wall at all and stays in position only because of the stagnation of the blood stream and the branching of the veins. On the other hand thrombophlebitis means that there is an inflammatory phase present and because of this the thrombus is fixed and adherent to the wall of the vein so that seldom does it break loose and cause an embolus. This happens only as the inflammatory part of the picture disappears and the thrombus terminates in the simple red clot. In the presence of stagnation this may extend far along the vein and thus gradually pass over into the phlebothrombosis and it is this part that gives the embolus. You may say that this is "splitting hairs in diagnosis" yet that is just what we are trying to do. The true phlebothrombosis carries a very high incidence of mortality.[12,15] The true and marked case of thrombophlebitis has a very low one.[11] On the other hand, it causes much morbidity and oftentimes results in crippling for life.

There seems to be a very marked difference in the experience and opinion of the doctors in this area and of those in Boston. Much of the work and many of the opinions reported by various surgeons over the country reflect the influence of the Boston group.

The author, fully realizing how meager has been his experience as compared with that of many surgeons over the country, has thought it wise to briefly summarize some of these reports.

As Dr. McCartney[15] has shown, thromboembolism occurred most often in his series between sixty and seventy years of age. At the other extreme, we find Kleinsasser's series of 502 cases, from three army vascular hospitals with 54.6 per cent of his patients between twenty and twenty-nine years.[13] This of course could be accounted for by the type of patients handled in the latter group. He further reports that 81 per cent of the patients in Stich's series were over forty years of age, 66 per cent over sixty years of age, and 20 per cent over seventy years of age. Fifty per cent of the Miller and Rogers series were over fifty years of age. Veal and Hussy[27] reported 70 per cent of their series of eighty-four patients as over forty years of age. Allen, Linton, and Donaldson[2] reported 80 per cent in their series of 367 cases over forty years. Many other series are similar.

Bed rest is a most important predisposing cause. Research by Koch has shown that there is a definite slowing of the circulation time from eighteen seconds in the youth of fifteen to twenty years of age to twenty-three seconds in the age

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group of seventy years. This factor is further increased with the slowing and stagnation occurring with bed rest. The best report on this was by Hunter et al. They reported on two series of 200 autopsies each. In the first series the patients had been in bed for a period of time with absolute rest and no exercise of the calf muscles. Fifty-nine per cent of these patients were found to have thrombosis as compared with only 44 per cent in the other series of 200 patients who were *really* ambulatory or had used forced leg muscle exercise in the forty-eight hours before death.

Kleinsasser reports the trauma factor as present and active in 36.5 per cent of his cases. The trauma factor is then subdivided, showing that 21.7 per cent had crushing injuries of some type.

The general sickness factor causing 18.3 per cent of the entire number is subdivided, showing 49 per cent as associated with pneumonia.

The postoperative factor was present in 14.1 per cent of them all and when this is subdivided he shows 6 per cent of the total series as post appendectomy with 2 per cent after hernioplasty.

The lower extremity was involved in 92.9 per cent of cases compared to 7.1 per cent in the upper, and the left leg more often than the right. This he explains as due to the effects of gravity causing more stasis in the lower extremity. The vena cava lies to the right of the aorta and the right common iliac artery is thought possibly to cause some pressure on the left common iliac vein as it crosses it just below the bifurcation.

The deep veins were involved more often than the superficial. Swelling was the most common of the initial symptoms (84.5 per cent), but pain was the most prominent symptom in the majority of the cases. Pain was the first symptom in 34.8 per cent though not always the most prominent. Pulmonary infarct was present in 9 per cent of all cases though the first symptom in only 6.8 per cent of the cases. At the time of admission swelling was the most prominent symptom" with cyanosis next. The most common initial treatment before arrival at the center had been bed rest with elevation and the application of some type of heat. Then came sympathetic blocks and ligations. Ligations of the great saphenous vein was most common, then the superficial femoral and common femoral. After arrival at the center the most common treatment was conservative followed by lumbar block. The results were generally fine with only a moderate amount of partial disability and only 15.4 per cent needing continued support. This is an important point too often overlooked.

No discussion of this subject could be complete without reviewing the reports of Arthur W. Allen.[1] Without calling him radical, we must say that he and his associates have taken the lead in the active treatment of this condition. The surgeons and internists of this area do not agree with his reports, but they are so extensive that they must carry great weight. Though John Homans was the first to report the ligation of the femoral vein to prevent the propagation of the clot in thrombosis and phlebitis,[2,8,9,10] Allen and his associates have popularized it almost to the point of danger. The incidence of thrombosis and embolism in their experience is very high, occurring most often postoperative in hip fractures. This occurrence is so high that they recommend a prophylactic femoral vein ligation in all hip fractures requiring operation, in all patients above sixty years of age having major pelvic and abdominal surgery, and in those aged and debilitated patients requiring prolonged bed rest. This they advise to be done bilaterally. Their statistics, with 458 similar cases cared for with prophylactic ligation, as compared with a like number cared for without, certainly are convincing.

Their records show a marked increase in the number of ligations from year to year. In the five-year period of 1937 to 1942 they ligated only 202 patients while in 1946 alone they ligated over 500 patients. Today they do a prophylactic bilateral vein ligation in 42 per cent of their cases, while they formerly did ligations only after marked signs of thrombosis or when infarct pains had developed.

Gerald Pratt of New York has tried to follow a sensible middle ground.[23] I agree with his work most fully. His work was done at the New York Post Graduate Hospital and the St. Albans Navy Hospital. This shows a report on ninety cases of massive pulmonary embolism with seventy-four deaths. Ninety per cent of his patients were over forty years of age, with 30 per cent above sixty years, 15 per cent occurring on the medical services. On the surgical service *only* he found 33 per cent after gastric surgery, 19 per cent after gall-bladder operations and 13 per cent after appendectomy.

It is often difficult in the individual case to distinguish the thrombosis and thrombitis part of

the picture. His separation of the signs and symptoms is the best I have seen, and I want to approve of his listing of them. It is important to notice that the bland thrombosis may be present with little or no symptoms while the thrombitis case shows the evidence of the presence of the inflammatory factors, pain, redness, tenderness, and swelling.

Pratt does almost no prophylactic ligations. He does therapeutic ligations only when definitely indicated. Even Allen admits that he cannot tell with assurance which veins are involved so he just ligates them all. This is not logical. It may be simple for him and those well trained, but the average surgeon doing one now and then will most surely get into trouble and calamities will certainly follow. If the patient is having repeated emboli or has had a severe one and some localization can be made, then I would do a ligation. If there are no localizing signs a high vena caval ligation seems to be the only sensible thing to do. Other than this is meddlesome surgery when we have other such valuable and effective controls.[3,16,19]

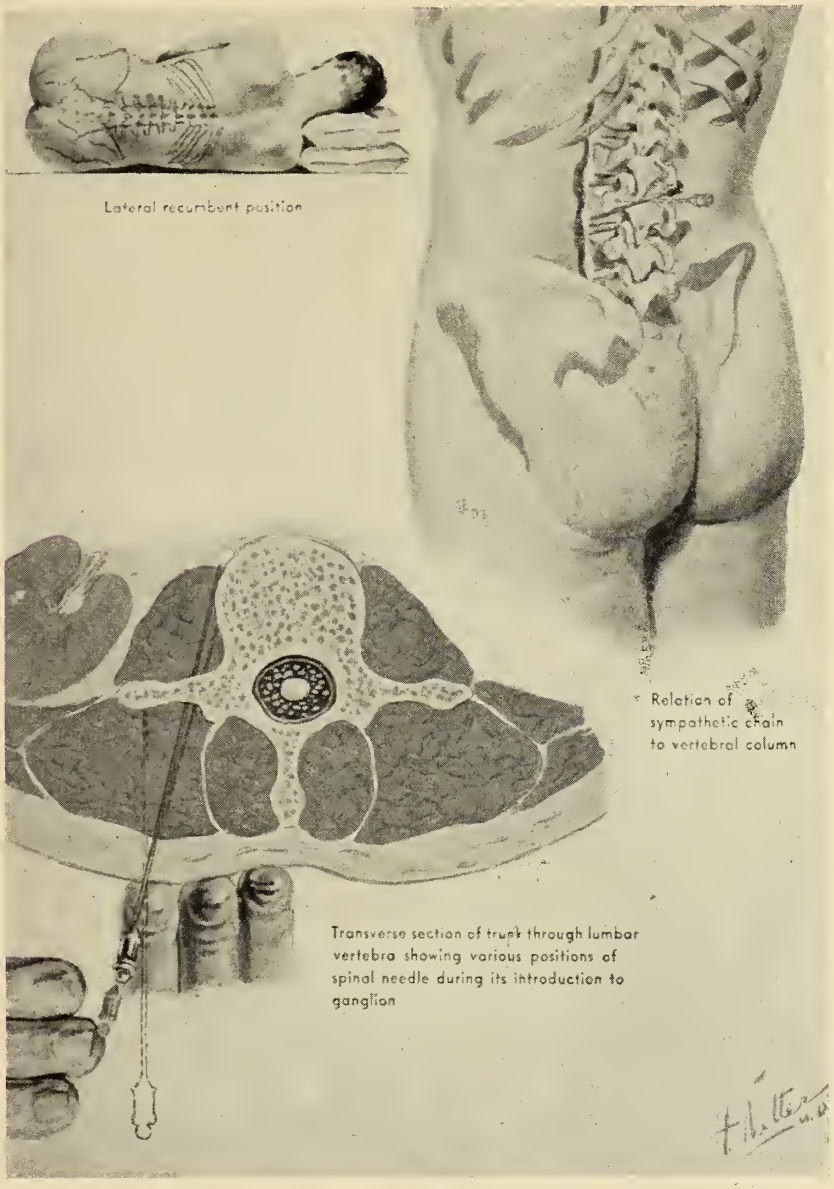


Fig. 1. Lumbar sympathetic block, after the technique of Ochsner.

In the acute thrombophlebitis case there is usually a marked reflex vasospasm.[19,20,21,22] For this condition the lumbar sympathetic block with

1 or 2 per cent novocaine is almost specific, and oftentimes the results and improvement are rapid and amazing. It should be done on every patient who shows any signs of vasospasm or pain. This is done with the Ochsner technique. I prefer to introduce the needles just a bit farther laterally. I am sure that I get better results with four needles than with one. It can be done under local anesthesia by injecting novocaine as the needle is inserted but it is much better to give some light anesthesia. It does hurt even with the best of technique (Fig. 1).

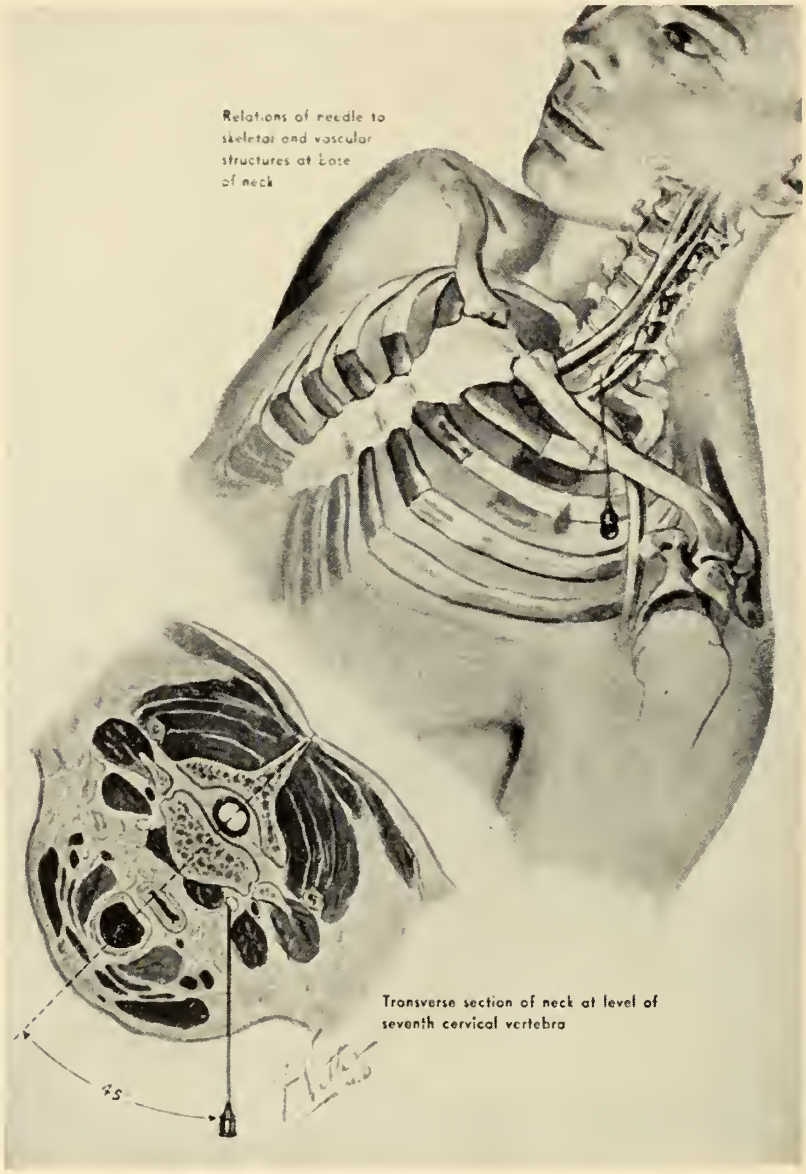


Fig. 2. Cervical sympathetic block—Ochsner

I cannot understand the lack of enthusiasm for the use of the lumbar sympathetic block in these cases. In my experience there has been complete relief or marked improvement in more than 90 per cent of acute cases. Much help is obtained even in the subacute and chronic case. Take the case of Dr. H., a dentist. This man, fifty-three years of age, had a deep femoro-iliac thrombophlebitis, of unknown cause in the left lower extremity, of eight weeks' duration. It was thought to be secondary to metastases to the retroperitoneal lymph glands. After one block and the application of routine hot packs the pain and swelling rapidly disappeared. He left the

hospital in eight days with a normal leg and the supportive bandage just for comfort. One week later he developed the same thing on the right side. The extremity was almost twice normal

The cervical sympathetic block should be used if the phlebitis has involved the upper extremity (Fig. 2).

I am convinced that the hot moist or Kenny

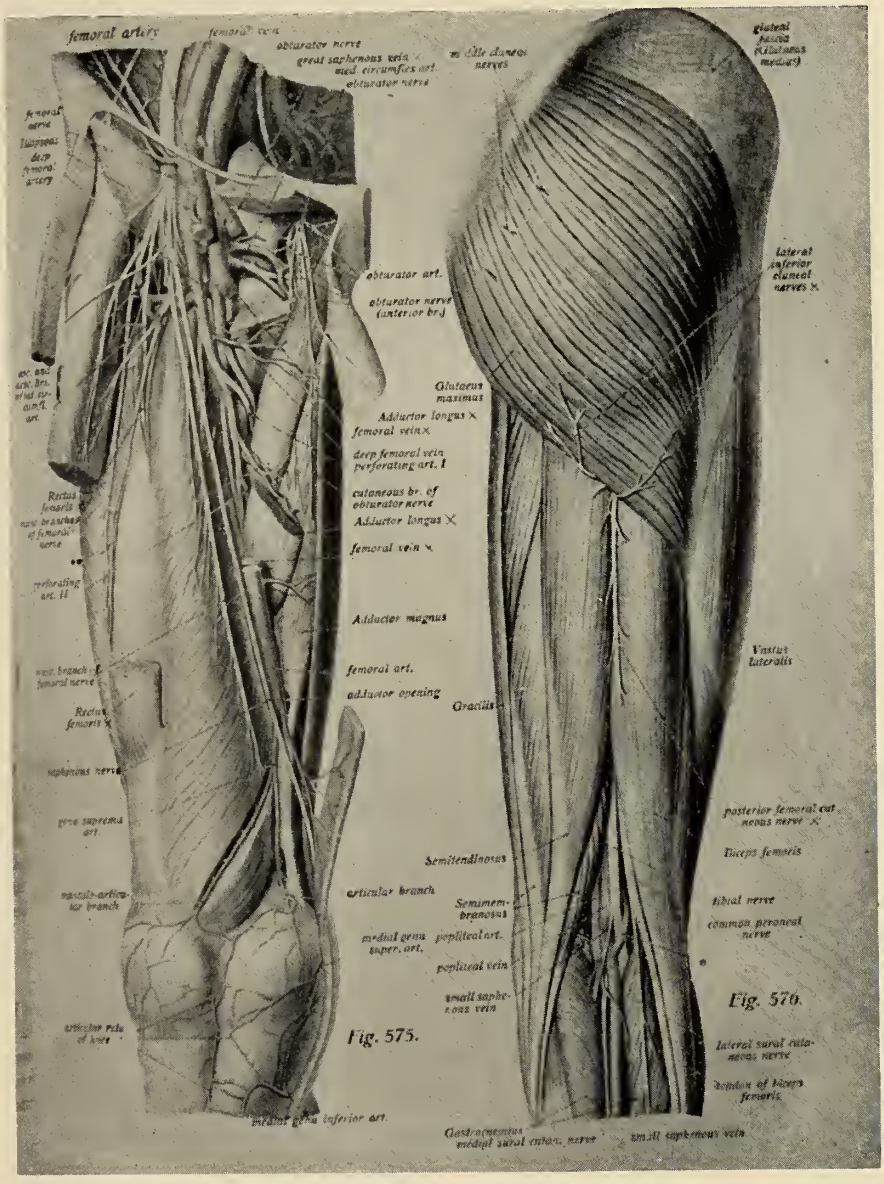


Fig. 3. Anatomy of the thigh, showing femoral veins. Taken from Sabotta anatomy.

size. Following two blocks and the routine packs it also returned to normal and he left the hospital two weeks from the date of the first block on that side with almost no swelling. I have advised him to wear a bandage just to be on the safe side.

With this same block and routine hot packs you can assure the patient, developing the usual postpartum or postoperative thrombophlebitis that he will be normal in one week.

pack is not used as often or as much as it should be for phlebitis. Unless it is well applied it is useless. If the blankets or towels are not wrung dry they are dangerous. It is the pack soaked with water that causes the burns. Carefully applied at a temperature of 125 to 130 the pack will not cause burns (See Instructions).

Research by Drinker[7] has shown that the lymphatic drainage is rapidly increased in the

presence of the hot moist pack and that the vasospasm in the tissues tends to be relaxed. The drainage rapidly increases as the temperature of the pack is increased to tolerance. The use of the

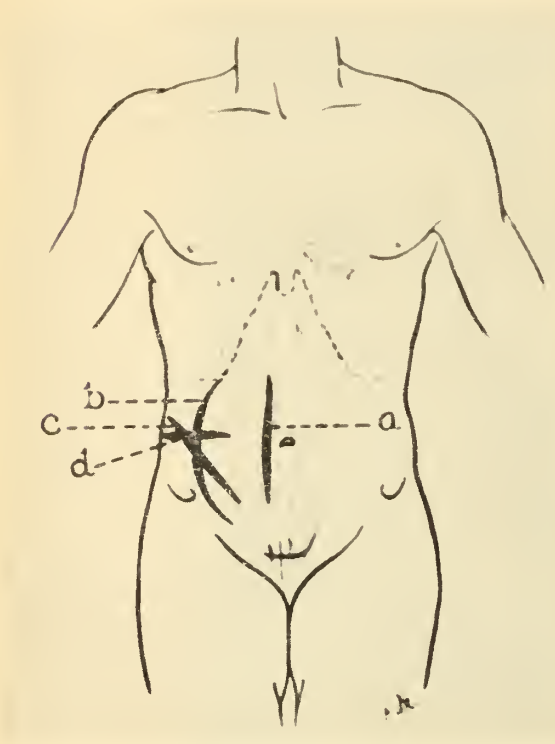


Fig. 4. Incisions commonly used in ligation of the inferior vena cava: *a*, right paramedian, for transperitoneal approach; *b*, *c* and *d*, incisions for extraperitoneal approach.

hot moist pack is of so much value that it should be used as an adjunct in every case (See Instructions).

A ligation, if done, should be of the superficial femoral[14] and this just below its junction with the profunda femoris to form the common femoral (Fig. 3).[1,6,8,9,24,26] This effectively blocks the deep veins of the lower leg and at the same time preserves the collaterals to carry on. The great saphenous vein should be preserved unless it is varicosed. If so, it too should be ligated.

The ligation of the vena cava is a major operation.[27] It can be done through any of four incisions (Fig. 4). Many use the transabdominal. It is best done through the extraperitoneal approach (Fig. 4).[24] Most of this is a muscle-splitting incision with the peritoneum and ureter carried inward. Be very careful of the small veins draining into the vena cava as they can be very annoying if torn. Ligate just above the bifurcation so as to be sure and stay below the left renal vein which at times comes off low. Doubly ligate the vena cava and do not section. If you do, be sure and transfix both stumps.

INSTRUCTIONS FOR HOT PACKS

Must be bed rest. Useless to sit in a chair with the leg resting on another chair, and try to apply hot wet packs.

Body must be lying flat. Only one pillow under head.

Knee should be flexed slightly with the lower leg high on a pile of pillows 16 inches above level of mattress.

Best if the lower leg (knee to foot) is about on the level with the knee slightly flexed.

Packs should be applied at least 10 inches both above and below the area to be treated.

Temperature of packs should be 120 degrees to begin with and then increased as tolerated, preferably to 130 degrees if the patient should not object.

Fresh packs should be applied as quickly as possible at time of change to prevent the cooling of the skin.

The packs are best applied as follows:

1. Fold a blanket four times and place on top of a pile of pillows.
2. Fill the hot water bottles (several, one-half full) with hot water of right temperature. Compress the air out of the bottles as cork is tightened.
3. Wring the large bath towels and wollen blankets out of hot water. Quickly apply the wet towels, then the hot water bottles and then quickly wrap the blanket about it all and pin tightly.

If the above pack is properly applied it will stay hot for at least two hours, and it should all be changed every two hours.

Best results will be obtained if the packs are continued for not less than four hours at a time.

When the ACE bandage is used and applied it is best if the patient walks a great deal.

Pratt[23] states that of 279 major vein resections the past year 21 per cent have been that of the common femoral. In contrast to twenty-six vena caval ligations two years ago, only two were performed the past year. For thrombosis, where vein section was considered imperative, the operation was done bilaterally in only 6 per cent of his cases.

I am so much in favor of the anticoagulant treatment as advocated by Barker[3,4] and so much against the femoral, iliac and vena caval ligations so frequently done that I would like to present a brief summary of Gordon Murray's article. It will convince the most obstinate holdout that the use of the anticoagulants should be the first thought in all these conditions.

Gordon Murray[6] of the Toronto General Hospital, has reported on 400 postoperative patients treated with anticoagulants. None developed thrombosis or pulmonary embolisms.

He further reported on 371 patients with venous thrombosis. All had typical symptoms and

signs of venous thrombosis. None developed pulmonary embolism.

Another group of 149 patients with definite pulmonary embolism were treated by the anticoagulants. These cases were not selected. Fifty-two of them were very seriously ill and in shock when first seen. Even though the statistics show that one in five of all individuals surviving the first pulmonary embolus will die of a later one, no deaths from pulmonary emboli were noted in the entire series where he had control of the dosage and care. No ligations were done in any of these cases.

Conclusions

1. Intravascular thrombosis and clotting can be prevented by the use of the anticoagulants, heparin and dicumarol.

2. If thrombosis and clotting have occurred, anticoagulants in appropriate doses will prevent further extension of the process.

3. If a patient is adequately treated with anticoagulants following pulmonary embolism, the chances of survival are excellent.

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SURGERY OF THE VEINS OF THE LOWER EXTREMITY

(Continued from Page 46)

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THE PAPANICOLAOU METHOD OF CANCER DIAGNOSIS

An Evaluation

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AS early as 1923, Papanicolaou, in the course of "a systematic study of human vaginal smears, became aware of the diagnostic potentialities of the vaginal smear in malignant lesion of the uterus." In 1928, he briefly reported these observations. While he continued with the investigation, nothing was again heard from him until 1941, when he and Traut published a paper, "Diagnostic Value of Vaginal Smears in Carcinoma of Uterus." Two years later, their classical monograph entitled "Diagnosis of Uterine Cancer by Vaginal Smear," appeared. This book, copiously and beautifully illustrated, gave, in detail, the method of preparation of the vaginal smear, the classification and identification of various cell types found in the vaginal flora and the description of the exfoliated cancer cells. The Papanicolaou method of cancer diagnosis was thus introduced to the medical profession. In the meantime, a few investigators, notably, Meigs and Ayrs, who early saw a diagnostic possibility in the method, undertook a systematic study of routine vaginal smears in large series of cases, with surprisingly gratifying results. Their enthusiastic reports encouraged clinicians and surgical pathologists, here and there, throughout the country, to follow their lead. Papanicolaou, himself, has conducted a class from time to time, to teach the method and popularize it, which has resulted in the popular acceptance of this method as an aid in cancer diagnosis in qualified hands.

However, many conservative leaders in the field of pathology who direct the minds of the average practicing pathologist, have taken a wait-and-see attitude and have been somewhat hesitant to wholeheartedly endorse the Papanicolaou method of cancer diagnosis as being worthy of adoption in routine work. They seem to view it with the academic interest of a skeptic, rather than with the open and practical mind of a clinical pathologist. They emphasize their preference for the older, more positive and reliable, though less spectacular, biopsy procedure, on the ground that the latter is a tried and established institution, not to be intruded by a seemingly questionable method of diagnosis by cell morphology alone, a practice so long frowned upon by them, as unscientific and inaccurate. They probably see a parallel between it and the interesting observations of MacCarty's on the malignant cell, although the latter was dealing with the individual cells of fresh unfixed tissue. They are apprehensive, too, lest the new technique should replace the biopsy in cancer diagnosis, and thus the universal demand for its use to the practical exclusion of the more reliable histologic method of diagnosis might result. Furthermore, they are fearful lest the cytologists and technicians who are being taught to do the preliminary screening of the smears, might be encouraged to venture into the field of cancer diagnosis. Unfortunately, too, the popular acclaim given the method, through the medium of lay magazines, has tended to discredit its scientific value. The proposition that it might be used as a simple screening test by public health agencies may have caused an unfavorable reaction. Thus, while the pathologist was still biding his time, the clinician, particularly the gynecologist, took the initiative in the investigation and evaluation of the method (for the simple reason that he has a personal interest in his patients) and contributed largely in its development and popularization. The clinician, and not the pathologist, has furnished the leadership in the application of this method in practice, even though it is essentially a laboratory procedure, and the responsibility for the final diagnosis should rest with the pathologist.

The original Papanicolaou method is used to identify various type cells in the smears of the vaginal flora which may contain, in cancer of the uterus, malignant cells exfoliated from the surface layers of the actively proliferating tumor. Several minor modifications have been proposed for preparing and staining the smear, which, however, do not alter its essential features. The accuracy of the method, in experienced hands, has been reported to be in the neighborhood of from 80 to 100 per cent of proven positive cases in large

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series of cases; although a most recent report by a Philadelphia group of investigators gave a 30 per cent failure in sixty-three proven cases of cancer in 500 consecutive gynecologic patients, with 1.6 per cent false positives in the remaining 437 negative patients, a figure which probably more nearly approximates the experience of the average laboratory. More remarkable is the fact that a positive smear has been obtained in early cases of cervical cancer, in a number of instances, in the face of the negative clinical findings. Applied in diagnostic bronchoscopy, it has proven its distinctive value as an early available means of diagnosis, where a biopsy cannot be obtained. Cancer of the urinary tract has also been diagnosed frequently without cystoscopic instrumentation. These are the experiences which cannot be ignored in the final evaluation of the method.

The following illustrative cases are cited from our own experience.

Case 1.—Mrs. R. H., aged thirty-nine, consulted a physician, complaining of excessive and continuous vaginal bleeding for more than a month. Bimanual examination was essentially negative, and the cervix appeared smooth. A routine smear obtained directly from the cervix (a procedure which we prefer to the smear of the vaginal secretion) was positive for cancer cells. On the operating table, the cervix appeared so clean that it was difficult to select a site for biopsy. It was decided not to attempt a rapid diagnosis by frozen section, on a small piece of tissue biopsied, suspecting the presence of the so-called pre-invasive carcinoma *in situ* which could be more convincingly demonstrated by the paraffin section. A vaginal hysterectomy was done immediately thereafter, without waiting for the final confirmatory diagnosis. A histologic examination of the removed uterus revealed a small localized area of retained placenta, accounting for the bleeding; and early epidermoid carcinoma involving a large area of the posterior lip of the cervix in its pre-invasive stage. The biopsied piece from the cervix, however, failed to demonstrate the presence of carcinoma, thus convincingly pointing out the superiority at times of the smear method over the biopsy in this type of cases (carcinoma-in-situ).

Case 2.—Mrs. S. D., aged fifty-five, consulted a physician, complaining of a discharging nipple. On examination, a small amount of grayish-brown secretion could be expressed from the nipple which was smooth and soft. There was no palpable nodule or indurated area in the breast substance. The breasts were symmetrical and identical in appearance and consistency. A smear of the discharge from the nipple revealed many cancer cells which were presumably exfoliated from an intraductal papilloma, probably undergoing malignancy. A simple mastectomy was performed first. The nipple was soft; the main ducts were dilated and filled with a grayish-brown secretion. The breast proper was fatty. Deep within the fatty parenchyma were areas of streaky fibrous proliferation, from which several pinhead comedo specks were expressed, and one small irregular, hard, fleshy nodule about 5 mm. in diameter, which, on frozen section, showed an infiltrating comedo-adenocarcinoma. A radical mastectomy was done. One axillary lymph node showed a metastasis.

Identification of tumor cells in the body fluids, by using various routine staining techniques or their modifications, has long been in practice in the clinical laboratory without attracting any particular interest on the part of the clinician. Papanicolaou's singular contribution to medicine lies in his special staining technique and its application to the vaginal smear in the diagnosis of uterine cancer. It is not difficult to see that the application of the method to the cytological diagnosis of various other body secretions should follow. Thus, cancer cells have been sought and recognized with frequent success in the sputum, bronchial washing, gastric washing, urine, prostatic fluid, as well as the pleural, abdominal and other body fluids. There is, therefore, no longer any doubt that the Papanicolaou method is a valuable adjunct in the practice of cancer diagnosis, not only with reference to the female genital tract, but as applied to any exfoliated cells derived from any tumor in any organs of the body.

Because of the relative simplicity of obtaining the smear, and the low cost of the procedure, coupled with the many encouraging reports already published, the Papanicolaou method will undoubtedly become increasingly popular among clinicians, and might be too freely substituted for the usual biopsy. Therein lies the real danger, against which the medical profession and the public should be warned, for the limitations inherent in it, freely acknowledged by all investigators, are likely to be ignored by the enthusiasm of the less informed.

It should be emphasized also that the success of the method depends, in a large measure, upon the close co-operation between the clinician and the pathologist in every detail of the execution of its procedure and the final interpretation of the smear.

The method should not be used as a final and sole means of cancer diagnosis. On this point Papanicolaou himself states that "the smear technique should not be considered as a substitute for biopsy, curettage, or any other standard

method of diagnosis, but as an adjunct to them. Its greatest value is that it permits recognition of malignant neoplasms at a relatively early stage and in instances in which other diagnostic methods may fail. This point has been fairly conclusively proven by us and other investigators." Meigs, who pioneered in the investigation of this method, says, "Vaginal smear and biopsy are complimentary techniques which, used together, will enhance the effectiveness of the diagnostic clinic. The most important contribution of the vaginal smear technique may be in cancer control. A large number of women may be screened and those with positive smears studied further by biopsy. We do not regard a negative smear as excluding cancer; nor do we regard a positive smear without biopsy corroboration as an indication for surgery."

Briefly enumerated, the Papanicolaou method offers these advantages over biopsy: (1) the simplicity of obtaining the smear*; (2) the low cost of the procedure; (3) a better nuclear stain than that obtained by the conventional hemotoxylin and eosin method; (4) the adaptability to pre-clinical cases and cases beyond the reach of biopsy; (5) the routine use in the follow-up in cases of cancer of the uterus, under radiation therapy; (6) the adaptability to routine gynecological office practice and the use in the cancer control and similar clinics (with its limitations fully appreciated); (7) the smear may be repeated as often as necessary. Against these, the following disadvantages may be cited: (1) the staining technique is more time-consuming than the conventional frozen section procedure and cannot be adopted in the rapid operating room diagnosis; (2) the satisfactory examination of a smear may be too time consuming for the busy pathologist; (3) the histologic pattern of the tumor often essential in cancer diagnosis cannot be obtained; (4) the danger of depending on the cytology of single exfoliated cells cannot be altogether eliminated; (5) the cytologic appearance may be misleading and offer little help in distinguishing the type of a malignant tumor; (6) an element of chance and the personal equation may sometimes influence the interpretation and final diagnosis in the less experienced; (7) a sense of false security in a negative report, often in the presence of a lesion, cannot be entirely eliminated.

*Proper fixation of the smear, namely, to fix it in alcohol-ether, WHILE WET, is absolutely essential.

Thus, these two methods of cancer diagnosis, the cytological (the Papanicolaou technique) and the histological (the biopsy) may be regarded as two distinct and fundamentally different approaches to a common objective. Yet, they are not to be considered as two major rival procedures but only as complimentary techniques, each with its advantages and disadvantages, the former never to replace or substitute for the latter, which should maintain its preferred place in laboratory diagnosis of tumors.

Finally, it may be stated that Papanicolaou, himself, is extremely modest in his claim for the technique, and freely admits that some other staining method may prove to be superior in the experience of others. He confesses his own inability to identify questionable cells by his technique, and declares that ten false negatives are better than one wrong positive diagnosis. He emphasizes that his method should never replace or substitute for the biopsy. On the contrary, he insists on biopsy confirmation. He recognizes the cumbersomeness of his technique and hopes to simplify it. He does claim that his nuclear stain is clearer and sharper, and the cornifying cancer cells are more distinctly brought out on the smear (particularly in epidermoid cancer of the lung) by his technique than by any other method now in use. He believes that the Papanicolaou method of cyto-diagnosis of cancer has come to stay and will enjoy a peculiarly useful place in cancer diagnosis. He further believes that it will eventually be accepted as a laboratory procedure entrusted in the hands of the pathologist Up to the present, however, he has given instruction in the cytologic diagnosis of cancer and his own staining technique to selected groups of clinicians and technicians, as well as pathologists, all of whom appear to have come away favorably impressed.

There may be an inherent danger of permitting the lay cytologists and technicians to wander too deep into the realm of cancer diagnosis. Just how to control this situation cannot be readily answered. It may be pointed out, however, that the recognition, if not the diagnosis, of a leukemic state through the blood smear by trained hematological technicians is being tolerated. Similarly, the identification of abnormal cells by this method by trained technicians under the supervision of a pathologist, who should make the final diagnosis, may be accepted. The grave danger of office diagnosis by clinicians without special training or by

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EXPERIENCE WITH SCREENING TESTS IN THE DETECTION OF CANCER

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CARDIOVASCULAR disease and cancer are the two greatest causes of death in this country. Of all malignancies, malignancies of the internal organs present the most acute problems, because they are silent for such a long period of time. Particularly is this true of cancer of the stomach and cancer of the large bowel, which together cause more deaths in both sexes than all other forms of cancer combined. Additionally, we are faced with the problem that the population of the United States is growing older so that by 1980, 40 per cent of the population will be over forty-five. The incidence of carcinoma will undoubtedly increase as the number of people in the older age groups is augmented.

The over-all picture for the results of surgery and treatment of malignancies is definitely influenced by the stage in which the disease is attacked. If the lesions are confined to the organ without the presence of metastases, the outlook is excellent. For example, in carcinoma of the stomach where the tumor is confined to the organ, a five-year cure reaches 60 per cent whereas the five-year survivals after metastases have occurred in about 6 per cent. There can be no question, then, that the ultimate hope for a better outlook in the problem of therapy in cancer rests with early diagnosis of the malignant lesion.

Unfortunately, cancer in its early stages is silent, and for that reason tests and examinations must be carried out upon individuals who seem to be apparently well. At the University of Minnesota two such studies have been undertaken within recent years. First, a study was started in the spring of 1945 in an effort to determine gastric cancer in individuals who had no symptoms. Since achlorhydria occurs in approximately 70 per cent of all patients with gastric carcinoma and an additional 15 or 20 per cent have hypochlorhydria, it was felt that examination of individuals who have achlorhydria and hypochlorhydria could possibly lead to the uncovering of silent gastric cancers. Histamine hydrochloride in triple doses of 0.5 mgm. each at half-hour intervals were given subcutaneously as a gastric acid stimulant. All individuals over the age of fifty who registered at the out-patient department at the University Hospital, were subjected to gastric expression following histamine stimulation. Free acid was tested for with Topfer's reagents, and quantitive estimations were made using 0.1 normal NaOH and Topfer's reagent and phenophthalein as indicators. Those individuals having achlorhydria and hypochlorhydria then had x-ray examinations of the stomach. The roentgenographic examination consisted of a fluoroscopic examination with an appropriate number of routine and spot films when indicated. In a number of instances, the patients for one reason or another were not given the three doses of histamine, and accordingly these patients have been dealt with as a separate group, the number of histamine injections given being indicated in those patients found to be achlorhydric. If no gastric lesion was found, each achlorhydric patient was given an appointment slip for re-examination in six months. In addition to achlorhydric and hypochloric groups, individuals with gastric polyps and pernicious anemia were also examined in a similar fashion. From a previous study by Dr. Wetherby of our institution, it was possible to obtain a series of patients who had been tested for histamine achlorhydria in 1940. These patients were recalled, and repeat examinations of the gastric juice and roentgenograms of their stomachs were done. In an effort to widen the scope of the project, so as to bring under observation more people who possibly could harbor the disease, individuals who had a family history of gastric carcinoma were included, and, in addition, people who had occult blood in the stool (Guaiac) and unexplained hemoglobin value of 11.0 grams or less (Sahli) were also examined.

Observations

From August 1, 1945, to May 1, 1948, inclusive (Table I), 2,977 patients who passed through the out-patient department at the University of Minnesota were eligible for this precursor gastric

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cancer study. Of this group, 2,890 had gastric expressions and 460 were found to be achlorhydric to triple histamine, 212 were achlorhydric to double histamine, 239 were achlorhydric to a hypochlorhydria, ten gastric carcinomas were present. In 110 patients of Dr. Wetherby's list, 113 gastrointestinal x-rays were obtained, and six polyps were found. Of seventy patients with

TABLE I. INCIDENCE OF ACHLORHYDRIA AND HYPOCHLORHYDRIA IN PATIENTS OF AGE GROUPS ELIGIBLE FOR PRECURSOR GASTRIC CANCER STUDY

Number Eligible	Gastric Expression	Achlorhydria (histamine)			Hypochlor.
		Triple GI	Double GI	Single GI	No. GI
2977	2890 (1747 m.) (1143 f.)	460 719 (297 m.) (163 f.)	212 254 (122 m.) (90 f.)	239 195 (131 m.) (108 f.)	90 52 (52 m.) (38 f.)

TABLE II
July 1, 1945 to May 1, 1948

	Number Individuals	GI Series	Findings Polyp	Cancer
Achlorhydrics	911	1168	19 (plus 13 ques.)	7*
Hypochlorhydrics	90	52	—	—
Wetherby List	110	113	6 (plus 1 ques.)	—
P. A. List	70 (26 new) (44 old)	136	4**	2
Relatives of Patients with Gastric Cancer	67	67	—	—
Patients with Hemoglobin Level of 11 G. or Less	45	45	—	—
Patients with Occult Blood in Feces	87	75	—	—
	1380	1656	29	9

* Two additional cases missed through organizational errors, and one additional case missed by x-ray and uncovered at operation for unrelated condition.
** One polyp found at post-mortem, two additional polyps found at gastroscopy and missed by x-ray.

single dose of histamine, and an additional ninety had hypochlorhydria, that is, less than 30 degrees of free acid. In these groups 719 gastrointestinal x-rays were taken in the individuals with achlorhydria to triple histamine, 254 in achlorhydria to double histamine, 195 in the individuals who were achlorhydric to a single dose of histamine, and finally, fifty-two were obtained in individuals who had hypochlorhydria. In all, then (Table II), 1,168 gastrointestinal x-rays were obtained in 911 patients with achlorhydria, and an additional fifty-two were obtained in the ninety individuals with hypochlorhydria. In these groups of patients, nineteen gastric polyps were found, with an additional thirteen questionably present, and seven silent gastric carcinomas were uncovered. Early in the study, two conditional cases were missed through errors in organization of the project and one additional case was missed by the x-ray examination; this was uncovered at a later date at operation for another unrelated condition. Thus, in all these patients with achlorhydria and pernicious anemia, twenty-six new and forty-four old, 136 gastrointestinal x-rays were taken. Four gastric polyps were found and two silent gastric carcinomas. Three polyps in the patients with pernicious anemia were found by gastroscopy. These were overlooked in the roentgenogram. One additional polyp was found at autopsy examination. In the sixty-seven patients who were relatives of individuals who had gastric carcinoma, sixty-seven x-rays were obtained, and no polyps or cancers were found. In patients with a hemoglobin of 11.0 grams or less, forty-five x-rays were obtained for forty-five individuals, and no polyps or gastric carcinomas were noted. Eighty-seven patients with occult blood in the stool had seventy-five x-rays, and no unusual findings were noted from the standpoint of the presence of gastric pathologic lesions. All in all, 1,380 patients had 1,656 gastrointestinal x-rays, and twenty-nine gastric polyps and nine gastric carcinomas were found.

The need for developing some workable plan

that will filter out those individuals most likely to harbor a gastric malignancy is substantiated by the studies of St. John, Swenson and Harvey in 1944 and of Daily and Miller in 1945. From

TABLE III. RESULTS OF PRECURSOR GASTRIC CANCER STUDIES

Investigators	Number Receiving GI Studies	Findings
St. John, Swenson and Harvey (1944)	2,413 over the age of 50 without gastric complaints	2 carcinomas 1 lymphosarcoma
Daily and Miller (1945)	500 males over 45 presumably free of digestive complaints	1 benign gastric ulcer 1 polyp 1 antral gastritis
Univ. of Minnesota (1945—1948)	Over the age of 50 1,111 free of digestive complaints with histamine achlorhydria and hypochlorhydria	7 gastric cancers 25 gastric polyps

Table III, it can be seen that the former group subjected 2,413 patients over the age of fifty without gastric complaints to a brief fluoroscopic examination after ingestion of barium and found two silent gastric carcinomas and one lymphosarcoma, an incidence of unsuspected gastric malignancy of 1.2 per thousand patients. No gastric polyps were uncovered in this group. Daily and Miller reported on a series of 500 patients subjected to barium examination of the stomach. These examinations were performed on presumably normal men over the age of forty-five free of digestive complaints. Three gastric lesions were found, a benign gastric ulcer, a polyp, and antral gastritis in a third patient. It can thus be seen that employing the above-described filters, particularly achlorhydria, hypochlorhydria and pernicious anemia, as precursor gastric carcinoma groups, has permitted the discovery of a greater number of gastric malignancies for a given number of x-ray examinations of the stomach than in the studies described above.

Perhaps the most fruitful result of our investigation has been the uncovering of twenty-nine gastric polyps. Although many authors (Borrmann, Schindler, Rigler) have considered polyps of the stomach precancerous lesions, their actual status is difficult to evaluate in any given instance, as Spriggs and Marxer have indicated. It is one of the purposes of this study to attempt to secure a more satisfactory answer to the question of whether or not gastric polyps become malignant. This phase of the study has been carried out by Dr. L. Hay of our department, and we have noted in the gastric polyps under our observation that three have shown evidence of conversion of benignity to malignancy.

Cancer Detection Centers

As a result of the efforts employed in the precursor gastric cancer study as described above, it is felt that it would be more profitable to examine individuals as a whole rather than concentrating on any particular organ of the body. The thesis of the Cancer Detection Center has been the same as for the gastric precursor group namely, that cancer in its early stage is a silent disease, and to improve the end results of cancer therapy the lesions must be attacked in the early stages of development. With the approval of the Minnesota State Medical Association, the Cancer Detection Center has been set up as a clinical experimental project whose prime purpose is to examine apparently well individuals over the age of forty-five for the presence of symptomless malignancies. This clinical project will have a limitation of five years, after which the results will be carefully evaluated to determine its value. It is anticipated that only 1,000 patients will be examined each year, so that at the end of five years, 5,000 new patients will be examined. All patients will have re-examinations at six-month intervals. The emphasis in the Cancer Detection Center is on complete and thorough examination of a few, rather than relatively superficial examinations of large numbers of individuals. The examination, as carried out, takes one complete day, and the following parts of the examination are done in the morning:

(a) Complete blood count.
(b) Urinalysis.
(c) Blood Wassermann test.
(d) Occult blood in the stool (both by Guaiac and Benzidine tests).
(e) Gastric expression, using histamine as a gastric acid stimulant.
(f) A proctoscopic examination by a proctologist.

(g) Female patients have complete pelvic examination by a gynecologist.

As yet, the Papanicolaou technique is not being used routinely, but it is anticipated in the near future that this technique will also be added. Finally, before the morning examination is completed, the individual has an examination of the chest by means of the photofluorogram which is taken in both inspiration and expiration. The individual is then permitted to have lunch and returns in the afternoon for a complete physical examination by one of our doctors, using a routine examination form which has as its prime purpose the early detection of precancerous lesions as well as early carcinomas. We have recently added to our staff an otolaryngologist who examines the ear, nose and throat as well as the larynx of all patients, because it is our feeling that this is one area of the body which may harbor carcinoma without symptoms for a long period of time. You will note that routine examinations of the gastrointestinal tract and large bowel are not made because we are endeavoring to introduce workable filters here at the Cancer Detection Center, as well as in the gastric precursor study. To this end, then, the following individuals receive gastrointestinal x-ray series:

(a) Individuals with histamine achlorhydria and hypochlorhydria (less than 30 degrees freed acid).
(b) Patients with occult blood in the stool.
(c) Patients with a strong family history of gastric carcinoma.
(d) Patients with unexplained hemoglobin level below 11.0 grams.
(e) Patients with vague symptoms of gastric pathology which in any sense could be interpreted as being due to gastric carcinoma by the examining physician.

Similarly, the following individuals are given barium enemas:

(a) Patients with abnormal findings on proctoscopic examination.
(b) Patients with occult blood in the stool.
(c) Patients with unexplained hemoglobin level below 11.0 grams.
(d) Patients with a family history of large bowel malignancy.
(e) Patients who have vague symptoms that could possibly be conceived as being due to malignancy of the large bowel by the examining physician.

These examinations are not given on the day of the original visit to the Cancer Detection Center, but provisions are made for examinations by our x-ray department at a convenient later date.

At the completion of the examination the results of such examinations are discussed with the patient carefully and fully and in as nontechnical terms as is possible and then the individual is told to return to his family physician where he may obtain further information of a more detailed nature. Similarly, if any cancer or precancerous lesion is found, the patient is told to return to his personal physician so therapy may be instituted directly. A detailed analysis of our results, both positive and negative findings, is sent to the personal physician so that he may be fully aware of our findings. Individuals come to us, either by referral from their personal physician or of their own free will. If they come to us direct, they must give the name of some physician who is approved by the State Medical Association to whom we report our findings.

Examination being completed, the individual is then given a reappointment for a six-month checkup, at which time a complete examination, the nature of which has been described above, is performed.

Because of delay in obtaining even a temporary building, the Cancer Detection Center did not open its doors for examination of individuals until March 1, 1948. The response on the part of the public to this project has been almost overwhelming. To date approximately 8,000 individuals have applied for examination, but since our facilities are limited, we are at present not making appointment for examination more than six months in advance. In the meantime, we encourage all individuals to see their own personal physician so that a thorough examination can be carried out. From Table IV, it can be seen that 281 individuals have been examined at the Cancer Detection Center from March 1 to April 30, 1948, inclusive. In this group, five silent cancers have been found, three of these in the large bowel and two basal cell carcinomas of the skin of the face. In the first two weeks of the month of May,

TABLE IV. SUMMARY OF FINDINGS OF THE CANCER DETECTION CENTER, UNIVERSITY OF MINNESOTA

March 1, to April 30, 1948, Inclusive

I.	Total number of patients examined	281
II.	Carcinomas—total number	5
	Cancer of rectum	2
	Cancer of the cecum	1
	Basal cell carcinomas of face	2
III.	Precancerous lesions—total number	70
	Rectal polyps (including adenoma)	38
	Keratosis of skin	10
	Pigmented neavi in areas of irritation	11
	Kraurosis vulvae	2
	Oral leukoplakia	4
	Solitary thyroid adenoma	4
	Gastric polyposis	1
IV.	Benign Tumors—total number	40
	Adenocyatic disease of breast	1
	Hemangioma	2
	Fibroma	1
	Lipoma	2
	Sebaceous cyst	6
	Polyps of cervix uteri	11
	Pyogenic granuloma	1
	Cysts of cervix uteri	3
	Myomata of uterus	4
	Thyroglossal duct cyst	1
	Papilloma of skin	2
	Adenoma of prostate	3
	Urethral caruncle	3
V.	Suspicious tumors requiring further diagnostic procedures—total	16
	Tumors of lip	4
	Tumor of tonsillar pillar	2
	Tumor of tongue	1
	Adenal masses	6
	Uterine masses	1
	Ulcer of cervix	1
	Cervical erosion	1
VI.	Non-cancerous conditions requiring medical attention—total number	61
	Duodenal ulcer	4
	Cholelithiasis	1
	Arteriosclerotic heart disease	17
	Hemorrhoids	20
	Varicose veins of lower extremities	5
	Perforated ear drum	3
	Hepatomegaly	2
	Anal fissure	1
	Cataracts	2
	Chronic cervicitis	1
	Hydrocele	2
	Arthritis	1
	Calcifying myositis	1
	Hernia (inguinal)	1

The above findings noted in 134 of the 281 patients examined.

TABLE V. SUMMARY OF LABORATORY FINDINGS OF THE CANCER DETECTION CENTER, UNIVERSITY OF MINNESOTA

March 1, to April 30, 1948, Inclusive

I.	Stools for Occult Blood—total number	281
	Benzidine positive	26
	Guaiac trace	9
	Guaiac positive	7
	Total	42
II.	Urinalysis—total number	281
	Positive for sugar	10
	Positive for albumin	5
	Total	15
III.	Blood counts—total number	281
	Hemoglobin level below 11.0 grams	5
IV.	Gastric expression—total number	276
	Achlorhydria (after histamine)	45
	Achlorhydria (no histamine)	5
	Hypochlorhydria (after histamine)	39
	Hypochlorhydria (no histamine)	4
	Hyperchlorhydria	1
	Total	94

three additional carcinomas were found, all in the large bowel. To May 15, for the first two and a half months for which figures are available, eight carcinomas have been uncovered, and seventy precancerous lesions have been detected. Chief amongst these have been rectal polyps including adenomas, of which there have been thirty-eight. Ten individuals had keratosis of the skin, eleven had pigmented naevi in areas of irritation, in two there was kraurosis vulvae, in four leukoplakia (oral), in four solitary thyroid adenomas, and in one gastric polyposis. There were forty instances of benign tumors, and sixty-one instances in which noncancerous conditions requiring medical attention were uncovered, chief among which were arteriosclerotic heart disease and hemorrhoids.

The above findings were noted in 134 of the 281 patients examined. It can thus be seen that the early results of our studies at the Cancer Detection Center have been most encouraging. Although the effort is great, and the time spent considerable, still if the results continue to be as fruitful as they have in the first two and a half months, there can be no question that this project is a worth-while one.

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CANCER IN MINNESOTA CHILDREN

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IT HAS long been recognized that many children die of cancer. It is doubtful, however, whether physicians in general are aware of the fact that cancer is now among the leading causes of death in Minnesota children under fifteen years of age. If we exclude congenital malformations, diseases peculiar to the first year of life, and accidents, cancer (or leukemia) has ranked among the first five causes of death in children from birth through age fourteen in Minnesota during the years 1944 to 1947.*

The five leading causes of death for Minnesota children for the years indicated, with the exceptions noted, were as follows:

1944	1945
1....Pneumonia	1....Pneumonia
2....Diarrhea and enteritis	2....Diarrhea and enteritis
3....Measles	3....Influenza
4....Influenza	4....CANCER (32 deaths)
5....CANCER	5....Heart disease (32 deaths)
1946	**1947**
1....Pneumonia	1....Pneumonia
2....Poliomyelitis	2....Diarrhea and enteritis
3....Diarrhea and enteritis	3....LEUKEMIA
4....CANCER	4....Diseases of the nervous system
5....Influenza	5....Whooping cough

As Dr. Harold W. Dargeon recently pointed out, the high rate of mortality from cancer among children "is probably mainly due to the decline in deaths from other diseases. Increasing recognition and more accurate diagnosis have likewise raised the statistical incidence."[1] Since cancer does rank so high as a cause of death in children today, the subject calls for much more thorough study than it has hitherto received.

Considerable data on cancer among children have been gathered in a survey of all cancer deaths reported by Minnesota hospitals since 1940. This survey has been carried on by the Division of Cancer Control of the Minnesota Department of Health. Table I shows the number of deaths from cancer among Minnesota children under fifteen years of age for the years 1940-1947 inclusive. Table II shows the deaths among children of similar age from lymphatic leukemia, myelogenous leukemia, and Hodgkin's disease.

It will be seen from these tables and the accompanying graph that both cancer and leukemia may attack children at a very early age. Indeed, it is during the first five years that the largest number of deaths occur from both cancer and leukemia. The age curves for both types of disease show a tendency to dip during the age period five to eleven years, with a slight rising tendency in the early teen ages. In the children included in this study, the sharp rise in leukemia deaths at age two is particularly striking. It seems probable that many cases of leukemia that caused death at two years of age were present at birth and reached the fatal stage some time during the second year of life.

There is a notable sex difference in the cancers occuring in this group of children. As Table I shows, four cancers were found in boys to every three in girls. The leukemias do not show so marked a sex difference, although there are more cases of both types of leukemia in boys than in girls. The total number of cases of Hodgkin's disease is so small that the sex difference may be insignificant.

Table I also indicates the great variety of primary sites at which cancer has occurred in Minnesota children in recent years. The largest number have been found in the brain and nervous system. The kidneys, bones, and abdomen also rank high as primary sites.

It is of interest to note that in the larger series reported by Dr. Dargeon and his associates from the Children's Tumor Registry and Pediatric Service, Memorial Hospital, New York, the six main body areas in which cancer was reported were the central nervous system, bones, eye, kidney, blood and lymphoid system, and skin and supporting tissues. Also in that series of cases, the mortality incidence from both cancer and

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*For the period 1944-47 inclusive, exact figures are not available on the total population for the age groups considered. Census figures for 1940 give the following data for Minnesota children:
0-5 years: males, 140,327; females, 133,638
6-14 years: males: 211,622; females, 203,444
Estimates for 1946 indicate a decrease of 3.5 per cent for the entire population under 21 years of age. Therefore the estimated total population for these age groups, averaged for 1944-47, would be as follows:
0-5 years: males, 135,415; females, 128,960
6-14 years: males, 204,214; females, 196,323
These figures indicate that there are considerably more children in the 6-14 year age group than in the 0-5 year age group. The figures indicate no significant sex distribution.

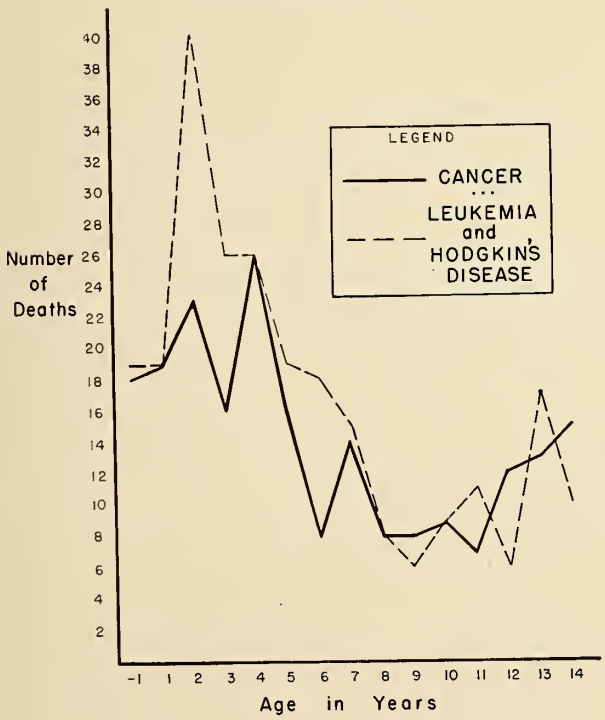
TABLE I. NUMBER OF DEATHS FROM CANCER AMONG CHILDREN RESIDING IN MINNESOTA
1940-1947 Inclusive

Primary Site of Cancer	Age of Children in Years														Total Deaths, Birth to Age 14	Sex of Child	
	—1	1	2	3	4	5	6	7	8	9	10	11	12	13	14		M	F
Brain and Nervous System	4	6	8	7	8	6	3	7	6	1	3	3	8	3	3	76	46	30
Kidney	4	4	4	2	8	4	1	0	0	0	1	2	1	0	0	31	15	16
Bone	0	3	0	0	0	1	0	3	0	2	3	0	1	6	9	28	14	14
Abdomen	3	1	2	2	0	1	0	2	1	2	0	1	1	2	1	19	15	4
Mediastinum and Lungs	1	1	1	0	3	1	1	2	0	2	0	0	0	1	1	14	11	3
Lymph Glands	0	0	1	1	3	0	1	0	1	1	1	0	0	1	1	11	7	4
Liver	2	2	2	0	2	0	0	0	0	0	0	0	1	0	0	9	6	3
Adrenals	1	1	1	3	0	1	0	0	0	0	0	0	0	0	0	7	4	3
Eye	0	0	3	0	1	1	0	0	0	0	0	1	0	0	0	6	2	4
Ovaries	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	3	0	3
Bladder, Prostate and Scrotum	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	3	2	1
Face and Neck	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	1	1
Miscellaneous	2	1	1	0	0	0	1	0	0	0	1	0	1	1	1	9	5	4
All Sites	18	19	23	16	26	16	8	14	8	8	9	7	14	15	17	218	128	90

TABLE II. NUMBER OF DEATHS FROM LEUKEMIAS AND HODGKIN'S DISEASE AMONG CHILDREN RESIDING IN MINNESOTA
1940-1947 Inclusive

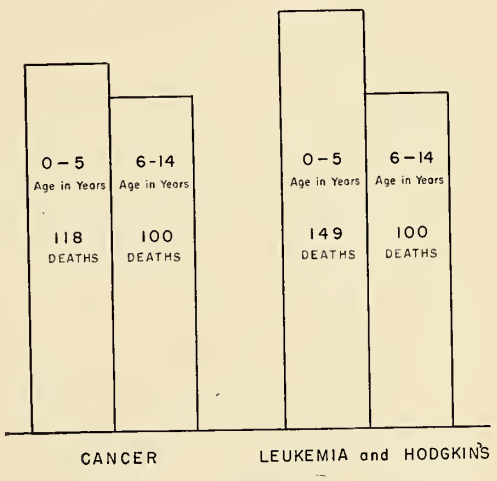
Disease	Age of Children in Years														Total Deaths, Birth to Age 14	Sex of Child	
	—1	1	2	3	4	5	6	7	8	9	10	11	12	13	14		M	F
Lymphatic Leukemia	16	14	37	23	24	17	13	11	5	4	5	8	4	12	7	200	110	90
Myelogenous Leukemia	3	4	3	1	2	2	3	3	3	1	4	3	2	3	1	38	28	10
Hodgkin's Disease	0	1	0	2	0	0	2	1	0	1	0	0	0	2	2	11	8	3
Totals	19	19	40	26	26	19	18	15	8	6	9	11	6	17	10	249	146	103

DEATHS FROM CANCER, LEUKEMIA, AND HODGKIN'S DISEASE AMONG MINNESOTA CHILDREN, FROM BIRTH TO FOURTEEN YEARS OF AGE.
1940-47 Inclusive



Graph 1

COMPARATIVE NUMBER OF DEATHS FROM CANCER AND FROM LEUKEMIA AND HODGKIN'S DISEASE IN MINNESOTA CHILDREN IN TWO AGE GROUPS.



Graph 2

leukemia was highest in children from birth to four years of age. Deaths from leukemia for that early period totalled more than those for the succeeding ten years, and deaths from cancers and other tumors during the first four years of life numbered 3,095, as compared with a total of 3,958 for the succeeding ten years.[2]

Cancers of the brain and nervous system appear to be fairly well distributed through the entire age range in the Minnesota children with a possible, though by no means certain, decrease after age eight. Cancers of the kidney and liver are fairly well concentrated in the lower age ranges. Bone cancers show rather more of a tendency to prove fatal during the later ages of childhood. A few abdominal cancers were found in this group of Minnesota children at nearly every age.

Lymphatic leukemia dropped fairly consistently from age four to age thirteen, but myelogenous leukemia showed only very slight variations with age. In Hodgkin's disease, as stated above, the cases are too few to indicate any sort of trend.

Because cancer and leukemia are so prevalent in children, it is obvious that physicians examining children should be constantly on the alert for symptoms that may be indications of these diseases, particularly since they are known to progress rapidly during childhood. A number of the cancers in this series were discovered only on autopsy. Special diligence is required in looking for signs of cancer in infants and preschool children. This group of Minnesota children, from birth to five years of age, contributed more deaths, 118, than did all the children in the much larger age group, six to fourteen years, in which 100 cancer deaths occurred. The same relationship holds for the leukemias and Hodgkin's disease. Among children five years of age or younger, deaths from these causes totalled 149; in children six to fourteen years of age, deaths totalled only 100.

As Dr. Dargeon reminds us, "A disorder that appears to satisfy all but a few of the criteria of a common disease may be cancer. . . . Repeated investigation, therefore, should be routine in the presence of (a) an atypical symptom complex or (b) an unusual child patient. . . . The child who is a behavior problem may likewise have a neoplasm."[1]

References

1. Dargeon, H. W.: Cancer in children. J.A.M.A., pp. 459-468, (Feb. 14) 1948.
2. Round table discussion on tumors. J. Pediat., 30:716-738, (June) 1947.

THE PAPANICOLAOU METHOD OF CANCER DIAGNOSIS

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technicians, and this should be repeatedly pointed out, lies in the fact that the method, in some respect, is found to be more involved than the biopsy, and the incidence of error in such hands would necessarily be far too great. Yet, this seems to be the trend. Since the pathologist, in a sense, is regarded as the final word in cancer diagnosis, it is reasonable to expect that he should take cognizance of the involved situation and offer his assistance in the solution of the problems arising from the universal practice of this useful, yet dangerous method. To that end, he should take advantage of every opportunity to be enlightened on the subject and urge the future pathologists to include in their training a course in cyto-diagnosis. Fellowships in cyto-diagnosis of cancer, such as those sponsored by the American Cancer Society, should be regarded as an answer to the present need.

Conclusions

The Papanicolaou cytologic method should be recognized as a laboratory procedure in cancer diagnosis. It must be considered as an adjunct to, and not a substitute for, the biopsy. When frankly positive (Papanicolaou's Class V), it is as conclusive as a histologic section. The rule should be, however, that a positive smear should be corroborated by the biopsy or the clinical evidence. A negative result should never be accepted as final. The fact that it depends solely upon the cytology of the exfoliated cells, and a personal factor may sometimes play a part in the interpretation and diagnosis, makes the method dangerous, unless employed with the full appreciation of its limitations. On the other hand, the fact that it has been proven to give a positive diagnosis in preclinical lesions and in lesions beyond the reach of the biopsy makes it a doubly welcome addition to the available methods of cancer diagnosis; yet this should not alter its fundamental shortcomings and evoke undue enthusiasm for, or reliance upon, it. The vaginal smear method may be employed as a routine measure in gynecological office practice or in a mass survey of women in a clinic or a cancer detection center as a preliminary screening process, only where proper and

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THE CANCER PROBLEM FROM THE STANDPOINT OF THE PRACTICING PHYSICIAN IN THE SMALL COMMUNITY

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THE INCREASING pressure of public opinion makes it mandatory that the practicing physician, particularly the physician in a smaller community, evaluate his own abilities and shortcomings in the diagnosis and treatment of cancer. The larger medical centers are able to point with justifiable pride to statistical improvement in the treatment of various types of cancer; lay groups are waging enthusiastic educational campaigns designed to bring the patient to the physician in the early stages of the disease; cancer detection centers are being established in many localities; and cancer research is receiving better support. Thus far, however, too little attention has been directed toward the position of the independent practicing physician in relation to the cancer problem. Yet he is the key to the reduction of cancer mortality, at least until some universal diagnostic test or cure for cancer is determined, for he is the one who has the best opportunity to discover cancer in its early stages.

Is the practicing physician at fault in the delay in the diagnosis of cancer? Apparently the answer is "Yes." Leach and Robbins,[1] in a very revealing recent survey, determined that the physician alone is responsible for the delay in the diagnosis of cancer (all types) in 27.8 per cent of the cases studied. The physician's culpability rises to almost 50 per cent in internally located cancer. A survey of seventy-two new cases of cancer in sixty-eight patients, seen by the author in his practice over a period of slightly more than two years, is shown in Table I and compared with the report of Leach and Robbins. The criteria established by Leach and Robbins were used in the analysis of these cases.

These seventy-two cases were either seen directly by the author or referred to him by some fourteen different physicians in the community. Cases in which the primary diagnosis was made elsewhere are not included. This series, though small and perhaps not statistically significant, does indicate that there is still a tremendous chance for improvement in the early diagnosis of cancer even in a comparatively small community where the physician-patient relationship is more intimate than in larger centers.

TABLE I. DELAY AND CULPABILITY IN CANCER DIAGNOSIS

	Leach& Robbins	Present Study
Patient alone	32.0%	37.5%
Patient and Physician	10.8%	2.8%
Physician alone	27.8%	16.7%
No delay	29.4%	43.0%

Why does the average practicing physician, who is almost always the first physician to see the patient, too often fail to fulfill his obligations to detect cancer in its early stages? There are many intangible aspects to the answer to this question, but some rather obvious reasons for delay in the diagnosis of cancer are apparent to those of us who form a part of that large group of average practicing physicians. In the first place, the "average" must always be considered, and in so doing, the sins of a few are laid at the feet of many. Lack of education, in a specific sense, is not the major fault that many believe it to be. However, the mental stimulation and constant re-education that is more or less forced upon a man associated with a teaching institution is either not available to, or not forced upon, the large group of independent practicing physicians, particularly those in smaller communities. Education or re-education of the practicing physicians therefore becomes a major weapon for the profession in combating delay in the diagnosis of cancer. Post-graduate refresher courses and clinics, such as are easily available in Minnesota, are of unquestioned value in this re-education process. Unfortunately, however, it is usually the better-than-average practicing physician who avails himself of such benefits. An intensive educational program, enticing enough to attract all physicians and conducted through the component county medical societies, might better serve to reach a larger group of physicians. In sharp contradistinction to the usual course of events, the smaller and more isolated the society, the better should be the program. (The Cancer Education Service of the Cancer Committee of the Minnesota State Medical Association, operated in co-operation with the Cancer Control Division of the Minne-

sota Department of Health, is designed to answer this problem in Minnesota).

The extreme pressure and the very nature of his everyday practice is another major factor in causing the average practicing physician to delay too long in the diagnosis of cancer. Certainly he knows, for example, that cancer of the stomach must be diagnosed early if there is to be any hope at all of cure; and he is equally cognizant of the fact that an x-ray examination is his best aid in establishing such a diagnosis. However, the busy physician sees hundreds of patients with vague, ill-defined and usually minor gastric complaints before he encounters one cancer of the stomach. He cannot x-ray all of these people, although it might be the ideal procedure, nor can he refer even a major portion of them to a specialist, or else he would not long remain in practice. What is the answer then to his dilemma? How can he sort out the early malignant disease, which when early is protean and mild in its manifestations, from the multitude of lesser ills? The better-than-average busy physician has usually solved this problem satisfactorily in a manner which we will stress later.

A third factor which tends to lessen the sensitivity of the average physician in the matter of cancer diagnosis is a general lack of enthusiasm, often more real than apparent on the surface. This is occasioned by a number of factors. Cases which he does diagnose early are referred to a surgeon or radiologist or a group of specialists who are accordingly given credit for the cure. The late incurable cases are quickly referred back to the general practitioner after a palliative procedure has been performed. He spends many days and nights with these patients answering the questions that have been left unanswered, dressing the wound that is still draining, controlling pain, and, finally, signing the death certificate. When such cases constitute the bulk of his experience with cancer treatment, it is no wonder that his enthusiasm is dulled! Perhaps a local cancer clinic at regular intervals, based on a survey of cancer cases diagnosed or treated at the local community hospital, would serve as a stimulus for practicing physicians in small communities. A surprisingly large volume of clinical material, which would be of personal interest to the local physicians, would thereby become available for a physicians' educational program.

There are many practical methods to aid in the shortening of the lag period in the diagnosis of cancer that are discussed today, aside from the hope that intensive cancer research may sooner or later offer a universal diagnostic procedure for the detection of cancer. Education of the public, cancer detection clinics, and education of practicing physicians have all been stressed as means of reducing the lag period in the diagnosis of cancer, and thereby reducing the mortality of this disease. The value of cancer detection clinics and public education is unquestioned, but in our opinion the final responsibility for the early detection of cancer falls directly upon the shoulders of the practicing physician. It is our belief that the major effort to shorten the lag period in the diagnosis of cancer must be directed towards the well-established personal physician-patient relationship.

Leach and Robbins have forcefully stressed the role of the practicing physician in cancer mortality reduction as follows: "The hope of making appreciable immediate reduction in cancer mortality lies with the individual physicians. The cancer clinic can reach but relatively few persons. The physician, whether he be general practitioner or specialist, internist or surgeon, must operate his own cancer detection clinic in his office and in his hospital service, before any reduction in cancer mortality is made. The means for reducing morbidity and mortality due to cancer are at hand. They remain to be used."

We would add to the need for education of the individual physician a plea for better organization among practicing physicians, particularly those in smaller communities. In larger cities and medical centers, the ready availability of various specialists and of tumor clinics should preclude the need for pooling of equipment and abilities. However, in smaller communities and rural districts where the majority, if not all, of the practicing physicians are general practitioners, we believe that there is a definite need for an informal organization of the practicing physicians in order to improve cancer morbidity and mortality. Such organization simply implies a more general use of existing facilities and individual abilities, and a cohesive effort on the part of the group to improve diagnostic facilities, preferably through a common medium such as the community hospital. No formal organization is necessary except the existing local medical societies, but the group effort must be strong

enough to transcend individual petty jealousies. It need not interfere with the individual practice of medicine, but should, in fact, strengthen the position of the private practitioner by improving his cancer morbidity and mortality rate and generally raising the standards of medical practice in the community. We are firmly convinced that the public now expects the individual physician to produce results commensurate with the generally improved results of cancer diagnosis and treatment in specialized centers. The pressure of public opinion is a powerful force that cannot long be ignored even by such individualists as physicians in our smaller communities.

The individual physician's evaluation of the facilities available to him in the diagnosis and treatment of cancer will logically proceed under the following general headings:

1. *Physical Examination.*—It may seem trite to review the individual physician's ability to perform a proper examination, but continued reiteration of the necessity for a careful physical examination in the detection of cancer cannot be overemphasized. "More is missed in medicine by not looking than by not knowing." It is significant that Leach and Robbins, in discussing the survey previously quoted, said, "In over 80 per cent of the patients in this study, the diagnosis of cancer could have been suspected or made by the initial physician if only a careful history and physical examination had been made."

We believe that the better-than-average practicing physician is seldom guilty of overlooking or not suspecting the presence of cancer chiefly because he will not allow himself to perform a poor examination. If, in spite of a busy practice, the physician takes a careful history of the case he will usually be able to segregate the more serious ailment from the multitude of lesser ills. It has been said, "If you listen to the patient long enough, he will tell you the diagnosis." However, if the diagnosis is not clear after a careful history and physical examination, the physician must insist on a more careful study of the case and make it clear to the patient that he must return for re-evaluation at regular intervals, particularly if his complaints are not promptly and completely relieved by symptomatic treatment. It is in this way only that the frequently insidious onset of cancer can be detected without undue delay.

2. *Endoscopic Examination.*—Next in importance to the information obtained from the history and physical examination is the ability to directly visualize an internally located lesion. A simple speculum examination of the cervix uteri or indirect laryngoscopic visualization of the larynx are such useful and common procedures that they should form part of every general physical examination. Sigmoidoscopic examination of the lower ten inches of the large bowel can be performed with relative ease and should be performed much more frequently. Such an examination, if done routinely, will reveal an astoundingly large number of cancerous and precancerous lesions of the rectum and rectosigmoid even in cases with no local symptoms referable to the lower bowel. A specialist in proctology will seldom be easily available in small communities, and for this reason every general practitioner with reasonable dexterity should learn to perform sigmoidoscopic examinations or he should have available and utilize the skill of some other physician in his community. Cystoscopy requires even more skill, but it is not beyond the scope of general surgeons in small communities. If he is wise, the average general surgeon will limit himself to cystoscopic diagnosis, leaving the more difficult problems of treatment entirely to a skilled urologist. However, since urologists are not universally available, each community should have and should utilize the skill of at least one physician for cystoscopic diagnosis. Bronchoscopy, gastroscopy, thoracoscopy and other endoscopic procedures are more highly specialized examinations which may be beyond the scope of physicians in smaller communities. The need for such procedures is less frequent than for the more commonly used endoscopic examinations, but each physician should recognize the occasions when such specialized examinations are required and should promptly refer the patient to a competent specialist.

3. *X-ray Examination.*—Adequate roentgenological facilities are a sine qua non in the diagnosis of cancer. Adequate facilities include not only suitable x-ray and fluoroscopic equipment but the services of an experienced roentgenologist as well. The physicians of Austin and other communities throughout Minnesota have for several years employed the part-time services of expert roentgenologists from nearby urban cen-

ters. Such an arrangement cannot fail to improve the general standards of medical practice in a community and aid immeasurably in the early detection of cancer. The position of the general practitioner in the community is greatly strengthened thereby, and the improved quality and increased quantity of his practice more than compensate him for the work referred to the roentgenologist.

4. *Pathological Examination.*—The saying "Every tissue worth removing from the human body is worth examining microscopically," is not without merit. Not infrequently the pathologist discovers early cancer in the routine examination of tissue removed surgically in cases where the presence of cancer was not suspected clinically. Certainly most small hospitals cannot support a pathologist, but arrangements should be made with a competent nearby pathologist for the routine examination of all surgical and biopsy specimens. It is only logical that a higher percentage of practicing physicians will utilize the advantages of a biopsy in borderline cases when the arrangements have been made for the routine examination of tissue.

The nonavailability of a pathologist for frozen sections and the necessary delay when one must wait a few days for a pathological report are inconveniences that one must tolerate in smaller hospitals. However, in spite of the increased burden for the surgeon who does not have a pathologist on hand to share his responsibilities, the lack of immediately available pathological reports is not a very serious problem and need not jeopardize the patient. We would personally prefer the slightly delayed but reliable reports of a competent pathologist to immediate reports from a poorly trained resident pathologist. However, we must add that we do miss the personal presence of a pathologist, particularly the stimulus that the usually inquisitive and critical mind of one of that specialty adds to the practice of medicine. The status of the pathologist as a consulting specialized clinician must be maintained; and when more well-trained pathologists become available, every sizable community should seek to obtain a full-time pathologist.

5. *Surgery.*—The physician must be extremely critical in his evaluation of his own ability or the ability of others in his local community to handle the surgical treatment of cancer. Certainly minor cancers, such as many of the cutaneous cancers, can be treated by anyone reasonably skilled. However, cancers of the breast, gastrointestinal tract, and other organs require a maximum of surgical skill, as any operative procedure for such cancers must of necessity be of a radical nature if good results are to be expected.

The improved quality and quantity of surgical training in the past decade has gradually improved the standards of surgery in small hospitals, so that skilled surgical treatment of the more common types of cancer amenable to surgery is now available in many of our smaller communities. It is the author's opinion that this is a healthy trend, for regardless of the efficiency and impeccable reputation of our larger medical centers, many patients will inevitably remain at home for treatment unless the very nature of the disease absolutely demands highly specialized treatment, such as neurosurgery, which is available only in the larger medical centers.

6. *Irradiation Therapy.*—The ability to properly administer irradiation therapy in the treatment of cancer, like the surgical treatment of cancer is a specialized field and, here, too, no compromise should be made. Roentgen and radium therapy should be directed by a qualified radiologist at all times. It is our opinion that in certain fields, particularly the field of gynecologic malignancy, the treatment should be through the combined efforts of an experienced radiologist and a man experienced in the field of gynecologic malignancy. If such facilities are not available in a community, patients requiring this highly specialized type of treatment should be referred elsewhere. Here again, commensurate with increasing demands and with the increasing availability of well trained men, many of our smaller cities, such as Austin, soon will have available adequately trained men and adequate equipment for the treatment of these specialized cases of cancer.

In order to obtain an approximate idea of the volume and type of cancer work that a general surgeon in a small community encounters, we have analyzed the seventy-two new cases of cancer, referred to in Table I, that we have seen during a period of slightly over two years since returning to Austin after military service. It

TABLE II. ANALYSIS OF CAUSE FOR DELAY IN DIAGNOSIS OF CANCER BY PHYSICIANS

Failure to perform proctosigmoidoscopic examination	4
Relying upon negative x-ray report	3
Failure to advise biopsy of palpable mass	2
Failure to advise uterine curettement	1
Failure to advise colon x-ray	1
Error in biopsy interpretation	1
Insidious nature of the disease *per se*	2
Total	14

should be emphasized that these cases do not, of course, represent an attempt to survey all of the new cases of cancer developing in this community nor do they represent all of the new cases of cancer seen by members of the Austin Clinic, of which the author is a partner. However, since a great majority of these patients were referred by fourteen general practitioners in Austin or nearby communities, the group is a fairly representative group of cases. In Table II, we have attempted to classify the reasons for delay in the diagnosis of the fourteen of the seventy-two cases in which the physician was held responsible for delay in diagnosis, according to the standards set by Leach and Robbins.[1] In all fairness to physicians of the Austin community, it should be noted that in seven of the fourteen cases where the physician was held liable for the delay in diagnosis, the error was attributable to physicians outside of Austin and the surrounding communities, often to physicians in larger medical centers, and in no case was improper treatment advised. In the majority of cases where delay in diagnosis occurred, the delay resulted in spite of apparent conscientious efforts on the part of the responsible physician; and in many instances, the very insidious nature of the disease itself was a sizable factor in the delay. However, it is obvious from Table II that the omission of such simple examination procedures as sigmoidoscopic examination, uterine curettement, biopsy and x-ray examination constitutes a major and inexcusable source of delay in the diagnosis of cancer. It is also apparent from Table II that physicians are too prone to rely on a negative x-ray report as infallible, often in the face of strongly suggestive symptoms. Under such circumstances, the author is reminded of an aphorism which Dr. E. L. Eliason of Philadelphia has often repeated for his students: "When the clinical and laboratory findings do not agree, repeat them both."

The various types of cancer encountered in this series are shown in Table III. It should be noted

TABLE III. LOCATION OF CANCER IN SEVENTY-TWO CONSECUTIVE CASES IN A GENERAL SURGICAL PRACTICE

Anus, rectum and colon	18
Breast	14
Stomach	11
Lip	4
Ovary	4
Fibrosarcoma (soft tissues)	3
Fundus uteri	2
Cervix uteri	2
Kidney	2
Bladder	2
Esophagus	2
Skin	2
Alveolar process	1
Pancreas	1
Hodgkin's Disease	1
Penis	1
Urethra	1
Vulva	1
Total	72

that of the seventy-two primary cancers, there were five instances of multiple cancer. Three patients had new primary breast cancers at intervals of seven months, two years, and seven years after the first breast cancer. One patient had two separate carcinomas of the large bowel occurring almost simultaneously, and another patient had a resectable carcinoma of the transverse colon two years after the successful resection of a carcinoma of the cecum.

TABLE IV. TYPES OF TREATMENT

	Treated Locally	Treated Elsewhere
Major radical surgery	35	8
Major palliative surgery	4	1
Minor surgery, other than diagnostic procedures	10	3
Irradiation	0	4
Palliative non-surgical treatment	5	0
No treatment (refused)	2	0

A brief analysis of the type of treatment rendered the cases in this series is shown in Table IV. There were three operative deaths in our thirty-five cases where major surgery was performed in the hope of ultimate cure. These three cases were all gastric resections in poor risk patients, two of whom had acute, frank perforations of carcinomatous ulcers. Death was due to auricular fibrillation and cardiac failure in one case, surgical shock and aspiration atelectasis in another, and pulmonary embolism on the 14th postoperative day in the third case. There were two known deaths in the major cases treated elsewhere, one following a combined abdominoperineal resection, the other following a gastric resection. The immediate cause of death in these two cases is unknown. One hospital death followed major palliative surgery (cecostomy for the relief of acute obstruction), but the death was

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AMNIOTIC FLUID AND MECONIUM EMBOLISM

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IT IS the purpose of this paper to present two cases of maternal death from pulmonary embolism by amniotic fluid and meconium, together with autopsy findings, a brief review of the literature, and a discussion of the significant features of this rare condition.

It was first described in 1941 by Steiner and Lushbaugh, and in two papers they reported a total of ten cases. Since then Hemmings has reported one case and Gross and Benz have published a report of three cases. Steiner and Lushbaugh, in their original paper in 1941, thoroughly reviewed the literature to that date, and stated that they found no evidence of this condition having been diagnosed previously as a disease entity. However, they did find many reports of sudden, unexplained death occurring during or after labor with features similar to those they assign to this condition. In these instances, the older writers had ascribed various causes for death. These, to name a few, included hypersensitive vagus, obstetrical shock, idiopathic postpartum uterine atony with hemorrhage, acute pulmonary edema of pregnancy, "facultative invalidism" of the heart, eclampsia without convulsions, internal or external uterine hemorrhage, et cetera. De Lee (quoted by Steiner and Lushbaugh) had shown the symptoms to be similiar to those of anaphylactic shock. It is noteworthy that none of these cases reported previous to 1941 included a careful examination of the lungs.

Steiner and Lushbaugh discuss extensively the clinical and experimental studies they have made of this condition. Hence, we will not recapitulate all these details, but instead, we propose to present briefly only the most pertinent data. They offer the theory that during a strong or tetanic uterine contraction, amniotic fluid rich in either vernix caseosa or meconium or both is trapped in the uterus and is forced into the venous sinusoids, becomes embolic and lodges in the lungs. This would be favored if egress of amniotic fluid is blocked or if the fetal membranes are not ruptured at the cervix. Such an explanation would not be applicable to our first case, in which a cesarean section was performed before labor had begun. However, they also postulate the role of a possible tear in the fetal membranes or placenta as suggested in some cases with bloody fluid. After these emboli lodge in the smaller pulmonary arteries, a picture of anaphylactoid shock ensues. This probably is associated with reflex vascular spasm in the lungs and cardiac depression as in the case of pulmonary embolism of other types. As predisposing factors, they include uterine tetany or very strong contractions, meconium in the amniotic fluid, intra-uterine death of the fetus, oversized baby, multiparity and older mothers.

Clinically, the picture of shock is described as occurring during or soon after labor, often associated with hard and violent pains of uterine tetany. Listlessness, dyspnea, cyanosis and coldness accompany the drop in blood pressure to shock levels with a rapid, weak pulse that may become unobtainable. Occasionally there is vomiting and delirium. The duration of labor is not abnormal. Death occurred during delivery in two of their cases, up to eight and one-half hours postpartum in seven cases, and on the seventh day in another.

The pathological examination reveals the cause of death in all of these instances to be widespread embolism of the small pulmonary arteries (less than 1.0 mm. in size), arterioles, and capillaries. The emboli in the lungs consist of particulate matter found in amniotic fluid and meconium; that is, epithelial squamae, amorphous debris (vernix caseosa), lanugo hairs, and mucin thought to be from meconium. The blood vessels are dilated. Experimental data with rabbits and dogs, as reported by Steiner and Lushbaugh in the same paper, reduplicated the clinical and pathological findings of the human cases. For these experiments, they injected amniotic fluid and meconium intravenously.

The differential diagnosis is extensive and includes postpartum hemorrhage, placenta previa, abruptio placentae, pulmonary air embolism, vascular thrombotic pulmonary embolism, and eclampsia without convulsions.

No specific preventive therapy is available, since it is difficult to prevent excessive vernix caseosa and meconium or uterine tetany. For

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treatment of the established lesion, they recommend measures designed to combat shock, papaverine to abolish the reflex spasm of the pulmonary vessels, atropine to counteract the cardiac depression reflexes from the lung, and oxygen. Caution is urged against administering excessive fluids which might result in the formation of pulmonary edema.

Case 1.—Mrs. R. N. (U.H. 764084), a white woman, thirty-two years of age, was admitted to the University Hospital on April 11, 1946. The patient had had three previously uncomplicated pregnancies. The patient's last normal menstrual period was June 6, 1945. Her expected date of confinement was March 13, 1946. The patient developed a brownish vaginal discharge three days prior to admission to the hospital. Sixteen hours prior to admission she experienced a sudden loss of blood from the vagina unassociated with pain. Her local physician made a diagnosis of placenta previa and inserted a vaginal pack to control the bleeding while she was traveling to the hospital. At the time of admission, physical examination revealed the abdomen to be distended by a gravid uterus of term size. The fetus was in the L. O. T. position with the head somewhat displaced to the left of the inlet. The fetal heart was easily heard in the left lower quadrant. Since the patient was potentially infected as a result of the intravaginal packing, and because the patient was not bleeding at the time of admission, it was felt that delay in further management of the patient was indicated. The hemoglobin at the time of admission was 11.6 grams. The vaginal pack was removed and blood was made available for immediate transfusion. X-rays of the abdomen using soft tissue technique demonstrated the placenta on the anterior wall of the uterus well down into the lower uterine segment. Sixty hours after admission a moderate amount of fresh bleeding occurred. Vaginal examination at this time revealed an uneffaced cervix dilated two centimeters and through which placental tissue could be felt in all directions. The patient did not bleed following examination. Her pulse and blood pressure were normal. A classical cesarean section was done under local anesthesia allowing delivery by breech extraction of a male infant weighing 4190 grams. The placenta was situated on the anterior inferior wall of the uterus and covered the cervical os. It was removed manually following delivery of the child. The uterus contracted firmly and very little bleeding occurred. The amniotic fluid was very heavily stained with meconium and had a greenish, bile-colored appearance. It contained many small particles of bile-stained vernix. The infant made two respiratory efforts but did not inspire. The respiratory tract was filled with the green amniotic fluid which could not be aspirated with the bulb syringe. Bronchoscopy was done at once but the material could not be aspirated even with mechanical suction. The infant died in five minutes. Following delivery of the infant, the patient complained of rather severe pain in the abdomen and she was given 375 mg. of pentothal intravenously. Approximately five minutes after induction of the pentothal it was noted that the blood in the operative site was getting dark. A few seconds later it was noted that the patient was not breathing. An airway was inserted immediately and artificial respiration started. The patient's pulse and blood pressure were not perceptible. Palpation of the aorta and auscultation of the heart revealed death of the patient. There were no warning signs such as gradual drop in pressure or alteration of the pulse. The patient expired about seven minutes after the uterine wall was incised and five minutes after starting the pentothal anesthesia. Autopsy consent was obtained for infant and mother.

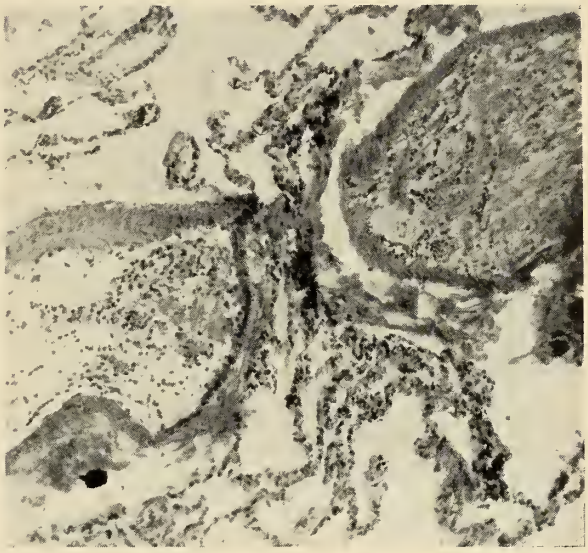


Fig. 1. Case 1. Photomicrograph demonstrates two small pulmonary arteries filled with protein material and leukocytes.

Autopsy report (A-46-593) *Mother.*—Pertinent findings grossly were few. Cyanosis was present and there was an 18 cm. midline, lower abdominal surgical incision closed with silk. The heart weighed 280 gms.; no gross abnormalities were found. There was no pulmonary thrombotic or air embolism. The lungs weighed 230 and 200 gms. on the right and left, respectively; grossly nothing abnormal could be found, no meconium, thrombi, emboli, infarcts or edema. The uterus extended 16 cm. above the symphysis and showed a closed anterior incision for cesarean section; the site of attachment of the placenta was seen around the internal os. The uterine wall was up to 4 cm. thick. Otherwise, the genital organs were normal, as were the remaining organs and systems of the body with the exception of a persistent urachus. Examination of the brain was not permitted.

Microscopic Findings.—

Lung: The small arteries, arterioles and capillaries were filled with epithelial cells, protein material in strands, and leukocytes, with remarkably few erythrocytes seen. The parenchyma was otherwise normal.

Uterus: Some of the sinusoids were filled with cells

suggestive of epithelial nature. The other changes were typical for the regnant state.

Breast: There were changes typical of the gestational breast with large lobules of acini in which fat globules were seen.

Urachus: This contained a dense polymorphonuclear suppurative exudate in its lumen. Heart, spleen, kidney, liver, ovary and lymph nodes were all normal.

Autopsy Report (A-46-592) *Fetus.*—Gross appearance: The child was a well-developed male infant weighing 4150 grams. The eyes were normal, the sclerae not icteric. The skin was not macerated, but all cutaneous folds and recesses were filled with vernix caseosa which was stained a marked yellow from pigment in the amniotic fluid. The color of the umbilical cord was a dark yellow-green. The abdominal viscera were essentially normal to gross inspection. The stomach and entire small bowel were distended with a thin greenish-yellow fluid. No meconium was found in any portion of the gastrointestinal tract. The right lung weighed 105 grams, the left 70 grams, neither floating in water. The pleural surfaces showed multiple white blebs (ruptured alveolae) on a reddish-purple background. No crepitant areas were palpable. The cut surface of the pulmonary tissue released a profuse yellow-green fluid, somewhat tenacious in the bronchi and trachea. Other organs were grossly normal. The cranial vault was not examined.

Microscopic Findings.—The lungs showed no areas of normal alveolar structure. The majority of bronchioles were incompletely blocked by desquamated epithelial cells with occasional ones showing a yellowish granular material, and, rarely, fibrous strands suggesting lanugo hairs. Generally the alveolae were distended, the content being a fine granular precipitate, with occasional epithelial cells. The pulmonary vascular bed contained only normal cellular elements. The pancreas showed acini and ducts dilated by inspissated debris, mild cystic changes in the tubules. The other organs were not worthy of special comment as to microscopic appearance.

Case 2.—Mrs. V. N., a primiparous, white woman, thirty-one years of age, was admitted to a local hospital in labor at 10:00 P.M. on March 20, 1941. The pregnancy had been uneventful until three hours after onset of labor. At that time a small amount of uterine bleeding occurred which persisted until delivery. Five hours after admission she was delivered of a normal living infant by low forceps. The labor pains were not recorded as being unusual. Two minims of pituitrin were given by hypodermic injection 30 minutes prior to delivery. Moderate bleeding occurred following the delivery which was not checked by the expression of the placenta. The patient was given ergot and pituitrin subcutaneously with no appreciable effect upon the contractility of the uterus. The cavity was then packed with gauze. Intravenous gum acacia was administered and the patient prepared for laparotomy. A blood transfusion was started and the abdomen was opened. Clamps were placed on the uterine vessels, but the patient expired suddenly at this point.

Autopsy Report (A-41-672).—There was no cyanosis. A 10 cm. midline abdominal incision extended above the symphysis and had eight sutures in place. The peritoneal cavity contained about one liter of serous fluid, and the heart, lungs, liver and spleen were normal grossly. The uterus was globular in shape and measured 24 cm. in length and 12 cm. in width; the cervix was 8 cm. long. A laceration measuring 8 cm. in length and 12 mm. in depth began at the internal os and extended through the thickness of the lateral wall of the uterus. In the broad ligament opposite this laceration was a large hemotoma. A smaller laceration was found on the opposite side of the uterus, arising at the internal os and extending upward 3 cm. but not through the entire thickness of the wall. The cervix showed no gross tears.

Microscopic sections of the lungs showed a mucinous material filling the small arteries; numerous epithelial squamous cells were seen, and there was a marked reduction in the number of blood cells in these vessels. There were no thrombi in any vessels. The remainder of the lung parenchyma was normal. Section of uterus showed considerable necrosis of the myometrium beneath the tear. The remainder of the examination was without note.

Discussion

The first description of amniotic fluid embolism to the maternal pulmonary system by Lushbaugh and Steiner in 1941 offers an explanation for some otherwise unexplained sudden maternal deaths. The second report published by the same authors in 1942 included a case almost identical with Case 1 in our report. Their patient died following cesarean section for placenta previa. In the two patients delivered by cesarean section we must assume, as they do, that the fluid gains entrance to the maternal circulation through the open veins of the uterine wall at the site of the incision. It is sufficient to say that the obstetrician should consider this newly described lesion when confronted with profound shock during and after labor or the sudden unexplained death of the patient.

The diagnosis is conclusively made in cases such as these only pathologically. Grossly, there is a paucity of findings, but other causes of sudden death should be carefully searched for. These include pulmonary embolism both by thrombus and by air and other cerebral and cardiac pathology. Only by microscopic examination are the classical features found. These consist of meconium, mucin, lanugo hairs, vernix caseosa, and

(Continued on Page 97)

History of Medicine In Minnesota

NOTES ON MEDICINE IN FREEBORN COUNTY, 1857—1900

ANDREW GULLIXSON, M.D.
Albert Lea, Minnesota

(Continued from December issue.)

Dr. Justin M. Hull came from Cook County Hospital and located at Albert Lea in April, 1874. He re-located the same year at Lake Mills, Winnebago County, Iowa. He is claimed a pioneer physician of that county and his history is recorded there. Records reveal however, that he did practice for short periods at Alden and Albert Lea. He was the son of Rev. O. P. Hull and was born in Dane County, Wisconsin, July 9, 1845. He served fourteen months in the Third Wisconsin Volunteer Cavalry, from 1862. He graduated from Bennett Medical College, Chicago, in 1873.

"Dr. Hull was one of the pioneer physicians of Winnebago County, having located in Lake Mills in 1874 and continued in practice until his death in April, 1889. He was a man of powerful physique, endowed with an unusual amount of personal magnetism, an apt student of human nature, and accurate in his estimates of men. He was eminently fitted to attract and hold a large circle of friends."—*Winnebago County History*, 1917.

Dr. H. H. Wilcox was born in South Carolina, December 28, 1850, and was a child when his parents moved to Kentucky. There he grew up; and after finishing school and teaching for a time, he entered the Cincinnati Medical College, where he graduated with honors, receiving a gold medal for his excellent scholarship. He married Ellen Abbot of Kentucky, in 1875. In 1877, with his wife and infant son, Leslie, he moved to Glenville, Minnesota, where he practiced his profession for several years and where his twin daughters, Gussie and Jessie, were born. He moved to Albert Lea in 1883, where he continued an active practice for many years. He established a private hospital later and for a time edited the *Albert Lea Medical Journal.* He took an active part in local and state politics, served as mayor for one term and as city health officer at different times. In 1905 his wife died, and a few years later he married Laura Hydorn. To this union one son, Richard, was born. He was a member of the Methodist Church, Western Star Lodge, and Apollo Commandery (*Albert Lea Evening Tribune*, December 15, 1925).

Dr. Wilcox was a solid general practitioner. He was apparently well read in medicine and surgery, and was filled with the urge of spreading the knowledge of modern medicine relating to isolation, antisepsis, disinfection, and sanitation in infectious and contagious diseases as revealed in the 1880's by Pasteur, Koch, Lord Lister, Loeffler, Elrlich, and others.

"Dr. Wilcox proposes to issue the first number of *the Albert Lea Medical Journal*, a monthly publication devoted to modern medicine, surgery, and prophylactic medicine. The *Journal* will be 7 in. by 10 in. in size and contain twenty pages of reading matter. The first issue will consist of one thousand copies. The long experience and practical ability of Dr. Wilcox, and his high standing as a citizen, is sufficient voucher for the character of the publication and should recommend it to the profession and the public and assure its success."—

Standard, August, 1898. "The *Journal* scintillates with wise and keen observations, which the general reader, equally with the profession, cannot fail to enjoy."—*Standard,* November, 1898.

The *Albert Lea Medical Journal* was published only a short time. There are a few copies—the only ones known to exist—in the library of the Minnesota State Medical Association in St. Paul.

Dr. Wilcox had a good command of the English language and contributed freely, to the local press, articles relating for the most part to problems of health and sanitation. In 1896 he contributed a splendid article on "Contentment," in which he deplored the fallacy of sending patients away to Colorado or to other dry climates for the purpose of regaining health. "There is something nice," he wrote, "about dying at home anyway; but how dreadful the thought of some poor homesick youth dying by inches away from home and among strangers. Think carefully before you send anyone away from home; then don't send them but go and take them." In November, 1896, he contributed an article titled "Tuberculosis" (Consumption) in which he describes it as a contagious disease, explains methods of transmission, urges strict isolation, and advises care in disposing of sputum and excretions. In the same month he contributed a long well-written article on diphtheria and quarantine, giving details of early history and quotations from ancient writers, showing that they were familiar with this malady. He describes also the work of Loeffler in isolating the bacillus, outlines modes of infection, and urges early call of a physician to establish diagnosis.

Dr. Wilcox was an ardent temperance man, and in December, 1896, contributed an article on liquor and the physician under the title "Medical Talks."

"Alcohol is a medicine of no little consequence. It is a stimulant, tonic, narcotic, sedative, nutrient, irritant, antiseptic, and antiphlogestic. It will make the rich man poor and the poor man rich. It will increase appetite and set up catarrh of the stomach. It will increase activity of the liver cells, causing the liver to enlarge, then reduce it to a nutmeg lump. It will increase a feeble heart to quick action and reduce a strong heart to weak action. I do not hesitate to prescribe it for those whom I know, and think need it."

At a meeting of the Science Society, February, 1892, Dr. Wilcox presented a paper on psychosomatic phenomena. "It was historical and many illustrations were given of unexplainable dreams and hallucinations. The discussion was lively."

Dr. Wilcox was nominated for the office of county coroner on the Farmers' Alliance ticket in 1890. In declining this nomination, he told that in his boyhood in Kentucky his father and brother served in the Union Army; that he had cast his first vote for General Grant, and later had voted for Hayes, Garfield, and Blaine, whose party had fought to save the Union and that now this party was "neglecting to take radical measures by which we might be emancipated from the whiskey curse. My anxieties to suppress the whiskey evil arose to John Brown proportions, and because I could not proclaim them freely in the Republican party, I joined the Prohibition party." Dr. Wilcox was elected to the office of mayor of Albert Lea in 1890. In 1891 he was appointed surgeon of the Minneapolis and St. Louis Railroad. In 1894 he was a candidate for state senator, highly endorsed by the press as honest, honorable, and able. In 1906 Governor Cole I. Crawford of the State of South Dakota appointed Dr. Wilcox surgeon in charge of the state soldiers' home at Hot Springs, a position that he retained until his death there in December, 1925.

Dr. S. H. Washburn located at Albert Lea in June, 1876, with offices over Wood's drug store. He came from Hattisburg, Illinois, and practiced here about two years and then located at Mason City, Iowa, where he had a large practice.

Dr. F. W. Beck located at Albert Lea in August, 1878. He practiced here less than two years and acquired a large circle of friends during his residence here. Unfortunately, Dr. Beck was a confirmed alcoholic and soon got into trouble. "He was a young man of fine talents and of rare attainments and was highly esteemed by those who knew him."—*Standard,* Aug., 1878. Dr. Beck died at his home in Chicago in August, 1879.

Dr. Johanna Disbro, "a graduate of the medical department of Iowa State University, left a practice in Centerville, Iowa, to bring her brother, a consumptive, to Minnesota. She practiced at Albert Lea in 1883. The following year she married a Mr. Crawford of Minneapolis. She was a homeopath.—*Excerpts, Nora Guthrie.*

"**Dr. W. T. Leonard** of Mauston, Wisconsin, locates at Alden. He appears to be a perfect gentleman and one who knows his business. He comes highly recommended for his ability and integrity. He is a blue-ribbon temperance man." *Enterprise,* May, 1878.

Dr. Leonard was not at Alden very long, perhaps less than a year. A local newspaper item in 1879 states that he returned to Alden for a visit—but where he went is not known. In 1900, according to the medical directory of that year, he was located at Campbell, Wilkin County.

Dr. R. C. Pinkham announced his location at Albert Lea in 1879 by a newspaper item stating he was "permanently located at Albert Lea. I devote my entire time to treatment of chronic diseases. I will cure a case of hemorrhoids in ten days; female weaknesses a great specialty."—*Enterprise,* July 24, 1879. He evidently was an imposter as no further record is found to indicate that he established a practice at all.

"**Doctor ——— Green,** from the west part of the county, attended an accidental shooting and removed a bullet."—*Standard,* 1876. Dr. Green evidently moved to Windom, Minnesota, as a local notice in the *Standard* of June, 1879, states that he returned from that place to Alden on a visit.

Dr. Eugene M. McCord was born at Titusville, Pennsylvania, in 1854, but spent most of his early youth at Waverly, Iowa. He came to Freeborn County in 1877 and entered into partnership with Dr. W. H. Smith, coroner, in the drug business and in practice. In the files of the local newspapers for May, 1878, there is an item to the effect that Dr. Smith and Dr. McCord conducted a post-mortem examination and stomach analysis in a case of death by strychnine poisoning. Another item in an issue in October, 1877, states:

> "I have purchased the drug store formerly owned by Dr. G. W. Bark and propose to continue in the same old stand. I am a druggist and when I say druggist, I mean a compounder of medicines, understanding the business from A— to izzard. Physicians' prescriptions carefully compounded."

He apparently had studied pharmacy and read some medicine in Philadelphia before locating at Albert Lea in 1877. An item dated Sept., 1878, states that "Dr. McCord left for Philadelphia to take a course of lectures in one of the leading medical colleges in the country." Another item, dated March, 1879, says:

"Dr. McCord will hereafter keep a temperance drug store. You can always find pure drugs, medicines, and chemicals for prescriptions. We only ask you to try our 'Bitter wine and iron,' which is a pure extract of roots and citrate of iron preserved in the best quality of grape wine, and no poisonous compounds calculated to kill more than it cures." An item dated April, 1879, says, "Diphtheria is a disease caused by blood poisoning and the best way to save your children from the dreadful scourge is by taking 'Bitter wine and iron,' found only at C. W. McCords." An item dated August, 1881, states that Dr. McCord was representing a wholesale drug firm of Chicago. Another item, October, 1882, states that he was publishing a paper in Jasper County, Nebraska.

He did, however, finally graduate in medicine, namely, from the Jefferson Medical College, Philadelphia. He then moved to Luverne, Minnesota, and in 1884 located in Saint Paul and enjoyed a long and extensive practice there, serving for a number of years on the Saint Paul City Hospital staff. He died in Saint Paul in December, 1913. His obituary appeared in the *Pioneer Press,* December 22, 1913.

"**Dr. Oscar H. Trenkler**, formerly of Portage, Wisconsin, a medical graduate from Germany and a practicing homeopathic physician in the United States for twenty-two years, locates at Albert Lea."—*Enterprise*, Aug., 1879. Dr. Trenkler moved to Mankato in May, 1881.

Dr. ——— Preston, born in Connecticut, located at Alden in 1878. He is described as a pleasant and agreeable gentleman and given much credit for his skill as a surgeon and as a general practitioner. He sold his drug store and practice to Dr. H. V. Perry in 1880 and moved to Youngstown, Ohio. He later returned to the West and located at Decorah, Iowa, where records state that he earned a high reputation as a physician. In April, 1889, he returned to Freeborn County, bought the drug store at Alden, and was again welcomed with a good practice. In a very short time he again sold out and returned permanently to Youngstown, Ohio.

Dr. Arne Nelson located at Hartland in 1878. He practiced there through 1879, and in 1880 located at Aldal, Polk County, Minnesota. People now living at Hartland remember him as practicing there only a short time.

Dr. John R. Jones was born in Green County, Wisconsin, in 1853. His father and mother both came from England. His mother died when John Richard was a small boy. His father married again and came to Freeborn County in 1867. John attended high school at Albert Lea, attended medical schools in Cincinnati and Chicago, then read medicine with Dr. Rowland of Twin Lakes, and no doubt practiced some with him. Dr. Jones did no private practice in this county but did practice for a time at Fertile, Iowa. He married Zella Williams, a half sister of Dr. Rowland's wife.

Dr. H. V. Perry came to Alden in 1880. "We understand that Dr. Preston is about to transfer his extensive practice to Dr. H. V. Perry, M.D., of White Hall, New York. Dr. Perry is a man of culture and fine abilities and well worthy of the confidence and patronage of our readers, having had in addition to a thorough course at Washington Medical University of Baltimore, Maryland, the honor and advantages of being nearly two years the resident physician in the hospital connected therewith and also several years' experience in private practice."—*Alden Eagle,* January, 1880.

Much of Dr. Perry's time at Alden was devoted to the drug business, and in 1887 he moved to Albert Lea, where he bought a drug store. There is no record of his doing any general practice here. He was not married.

In 1888 Dr. Perry sold his stock, drugs, and other goods and moved to Ellensburg, Washington. "Dr. Perry reports that he is doing well and having a profitable drug business besides his practice."—*Standard,* March, 1888.

Dr. E. M. Woodring was evidently a pioneer doctor of unusual ability and high intelligence. He came to Albert Lea late in the year 1880 and established a partnership with Dr. W. W. Smith, which continued through 1881. He was born on a farm in Green County, Wisconsin, date unknown, and was for a time telegraph operator at Mendota, Minnesota. He entered the Ohio College of Medicine and graduated with highest honors, taking the faculty prize in 1880. He practiced for a time at Green, Iowa, before he came to Albert Lea. He was regarded by all as a gentleman but in some respects as strange in his conduct. His associates at the college hospital in Ohio, where he was an assistant professor lecturing in medicine, stated that he often showed signs of marked excitability.

When he moved to Minneapolis in 1882, he became involved in an assault that resulted in arrest and conviction. Dr. Woodring had ordered an operating table from the Knickerbocker Company. The next day he returned the table, remarking that if he could secure a suitable table he would accept it and pay for it. The table was placed on the sidewalk and the following notice placed on it, "This table is brought back from Dr. Woodring's office because he would not pay for it and is for sale cheap." Soon afterwards, on meeting Mr. Knickerbocker on the street, an altercation arose, ending in the doctor's saying, "I will fix you in two hours." He consulted as to his legal rights in the matter and returned to his office. Here he armed himself with a long sharp knife of razor steel, used in hip and thigh amputations. Concealing this in his sleeve, he returned to Knickerbocker's store, where he found the offensive note again displayed on the table. During the ensuing altercation he drew his knife and made a lunge at Mr. Knickerbocker, but the latter deflected the blow and caught the blade above the elbow, which penetrated the axilla, missing the artery. Two employes overpowered the doctor, but in the struggle one was severely cut on the head. The doctor was promptly arrested, but released on bond of $1600 secured by Dr. France, Dr. Abbott, and Dr. Small. His trial drew a sentence of penal servitude, but his bondsmen and other influential friends secured a governor's pardon. The foregoing consists of quotations taken almost verbatim from *Albert Lea Enterprise,* May, 1882. Judging from the action of prominent bondsmen and other friends, Dr. Woodring must have been held in high regard by his colleagues and the public in general.

Dr. L. C. Biglow, a brother of C. S. Biglow of Owatonna, located at Albert Lea in March, 1880. He came from Muscatine, Iowa. He attended the State Medical Association's meeting in June, 1881, but in July of that year moved to Denver, Colorado.

Dr. M. L. Cutler, physician, surgeon, and electrotherapeutist, located at Albert Lea in 1880. He was born and raised at Osage, Iowa, came to Freeborn County from Frankfort, Iowa, and had a long experience in his profession. He practiced here only a short time and moved to Dakota City, Iowa, in 1882. An item appearing in the *Freeborn County Standard,* August, 1890, reads as follows: "Dr. L. M. Cutler, a former resident of Albert Lea, now of Saint Paul, was found dead in bed. His family was away at the time. Death was supposed to be due to heart disease. Autopsy revealed hemorrhagic ulcers of the lungs."

Dr. Melchoir Magelssen was born in Christiania (Oslo), Norway, in April, 1852. His father served as chief of police in the city of his birth until 1859, when he moved to Bergen, Norway, where he was made a magistrate. Dr. Magelssen came to America in 1881 and located at Albert Lea, in 1882, where he had a good practice until 1888, when he moved to Fergus Falls. He married Elizabeth Marie Hansen in 1883. To them one son was born in 1885. He died at Fergus Falls in 1895, aged 43.

The subject of this sketch spent his early days at school, attended the Latin College of Bergen (roughly equivalent to an American college) until 1869, when he entered the University of Oslo, from which he received a diploma as physician and surgeon in 1876. He continued his medical studies at the Royal University of Vienna, Austria, graduating in 1879, and completed his education in France. He then located in London, England, where he had a good practice, still continuing to study. He spoke and read the three Scandinavian languages besides English and German. He had a colorful personality, but the caste system of the old world, receiving accreditation by his contacts in Vienna and London, gave him an exaggerated notion as to the treatment physicians should receive from the general public in America. From a personal interview with a gentleman who knew him quite well, the following dictation was taken:

"Among other things, he felt that he was entitled to the right of way on highways, and he generally selected the middle of the road. This got him into a great deal of trouble with folks he met on the roads and trails, especially when the snow was deep in the winter and in the springtime when roads were narrow or breaking up. I recall that one time he published an advertisement to the effect that, on and after a certain date, he would display in a prominent window, the names and addresses of patients who owed him money and paid nothing on accounts for thirty or sixty days. He did post this list, and it caused considerable talk around town. Some disputed the accounts and threatened suit against him; some gave him severe tongue lashings; and a few landed short hooks to the jaw. I recall that the doctor said that, between the time of his advertisement and the publication of his list, collections were brisk."

While in Albert Lea he was offered a position as surgeon in a Brooklyn hospital, but he refused the appointment because of his large practice here.

He was an able, well-qualified physician and surgeon and a gallant gentleman; but in comparison with his illustrious cousin, Dr. Jacob Magelssen of Rushford, his paths through life had not encountered the rough detours that provide the kind and amount of gravel in one's diet that seemed to be needed in the making of an American of his day.

Dr. ——— Torkelson was a druggist and established the first drug store in Hartland in 1882. All druggists in those days prescribed medicines over the counter, and so he was called "doctor." An item in the newspaper in 1886 states, "Dr. Torkelson, our doctor, druggist, and postmaster, is dead." He died of consumption.

Dr. Paul C. Jensen was born in Copenhagen, Denmark, April 7, 1855, and spent his boyhood and had his early schooling there. At the age of fourteen, in 1869, he accompanied the family to America, where they settled on a farm southwest of Blue Earth in Faribault County. He next came to Albert Lea and found employment in the Wedge and Spicer drug store. In 1877 he entered the University of Michigan College of Pharmacy. Following his graduation there he immediately entered the medical school of that university, from which he graduated in 1882. He began practice at Albert Lea, but after about a year and a half moved to Chicago, where he was soon appointed assistant city physician. In 1889,

he married Miss Kathryn Hansen of Glenville, Minnesota, who within a year died in childbirth. He moved the same year to Manistee, Michigan, specializing in ear, nose and throat diseases. Twice he held the office of city physician, his first term involving a severe epidemic of smallpox. His second term began in September, 1926, and continued until his death. His official duties caused him serious financial losses in his private practice. Dr. Jensen was identified with county, state, and national medical societies and contributed articles to the medical journals. From his obituary the following sentence is culled, "All who knew him agree that he was an example of practical Christianity, tender as a husband, loyal as a friend, hospitable and cordial in the home, and sympathetic in the sick-room." On September 12, 1900, he married Dorothy Dimple Peach. No children were born to this union. He died of heart disease at his home in Manistee in the summer of 1931.

Dr. G. A. Stevenson, physician, surgeon, and specialist in diseases of the rectum, eye, ear, nose, and throat, was born near Chatfield. He located at Alden in 1884. A card dated April, 1886, reads:

"Dr. G. A. Stevenson, rectal diseases a specialty, cure painless, no knife or ligature used in treatment, cure guaranteed; piles, fissure, fistula. Send for illustrated circulars. Brinkhoff system used."

In January, 1887, Dr. Stevenson moved to Albert Lea but retained a partnership in the practice and business he sold to Dr. Cannon at Alden. In March, 1888, he moved back to Alden to practice but the same year sold his home to Dr. Cannon and returned to Albert Lea after taking postgraduate work in diseases of the rectum. In 1890 he attended the Chicago Polyclinic, taking a "refresher course." In 1891 he felt that his specialty was detracting from his general practice, as would be indicated by the following notice, "Dr. Stevenson has added an attractive sign to his windows and they are so plain that he who reads may run, and he who hears may learn that he is successfully treating all diseases."—*Enterprise,* January, 1891. "Dr. Stevenson moved to Alden Township, where he owns thirteen hundred acres of Freeborn County dirt, but will be in Albert Lea part time to look after his special practice."—*Enterprise,* October, 1892. In December, 1894, "Dr. Stevenson returned to Albert Lea as a permanent citizen. He rented his stock farm in Alden Township and bought a beautiful lot on Park Ave., Albert Lea."—*Enterprise,* December, 1894. He never did build a home on this lot, and as he refused to sell at a good price, it was finally turned back for taxes. In the early 1920's he went to Europe and studied eye, ear, nose, and throat work in Vienna. Returning in about two months, he practiced his specialty in Albert Lea and surrounding towns for a number of years, but retired in the early thirties.

Dr. Stevenson was a bright man, but he wrote his own ethics and lacked in human understanding. As with many, the doors were not guarded against some of the human frailties. He was a good doctor and did much good in an irregular way. He died an old man.

(To be continued in the February issue.)



Ernest M. Hammes, M.D.
President, Minnesota State Medical Association

President's Letter

THE COMING YEAR

I wish to take this opportunity to express to the members of our Association my appreciation for bestowing upon me the highest honor in the Minnesota State Medical Association. Having served on many committees and on the council for several years, I fully realize that the responsibilities and duties of your president will be greatly lightened by the continued co-operation of and assistance from these various committees. It has always been a marvel to me how regularly committee members attend meetings in Saint Paul, in rain or shine, and frequently travel long distances in spite of snow and icy roads. To the Twin City members this is a light chore by comparison. But such is the co-operative spirit of the members of our Association, resulting in the high standard of accomplishments by our medical profession.

The most delightful part of my new job will be to have an opportunity to meet my many friends at county medical meetings, and I do hope I shall be able to attend many of them. The only regret I have is that my office as councillor of the Fifth District has terminated. Your president is expected to attend all Council meetings, but he does not even have a vote in Council matters. Serving on The Council has been a most delightful and instructive experience, and a privilege to be associated with men whose wholehearted effort is to adjust and solve the many problems that confront our State Medical Association. I can assure you that some of these problems have been serious, necessitating long hours of deliberation, frank discussions, keen judgment and conscientious efforts. Men like Dr. L. L. Sogge of Windom, who has served on The Council for twenty-three years; W. W. Will of Bertha, for twenty-one years, W. L. Burnap of Fergus Falls, for fourteen years, and others have given of their time, ability and energy to an unlimited degree. This service can never be repaid, and we can only express our appreciation for their long and untiring service.

I should like to correct some erroneous impressions. I have been told on several occasions that members of The Council attempt to be self-perpetuating. Your councillor is selected by the members of the county societies from his district. His name is presented to the House of Delegates by his district at the annual meeting, and he is elected by that body. Members of The Council do not even have a vote in this election. Another complaint that has been voiced is that members of our State Medical Association have been unable to appear before The Council to present their problems. I am sure that if such a request is made to Mr. R. R. Rosell, our executive secretary, he will arrange that any member of our Association will be invited to The Council meeting and will be given ample time to discuss any important matter. Members of your Council are your elected servants, and their only desire is to keep our ball rolling smoothly, ethically, medically, professionally, and politically.

I fully realize that during the coming year many problems of a serious nature will arise. With our state legislators in session and a Congress in Washington with a dubious attitude toward scientific medicine, measures may be instituted, detrimental to the medical profession, but more important, detrimental to the public as a whole and to the progress of scientific medicine. I feel confident that the untiring effort that every member of our State Medical Association has manifested in the past will undoubtedly continue during the coming year. With the able assistance of Manley Brist, our legal adviser, and R. R. Rosell, our executive secretary, our ship will sail through these turbulent waters, and scientific medicine will maintain its high degree of efficiency in every field.

In closing, I wish you and yours a healthy, happy and prosperous New Year.



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

THE TWENTY-FIVE DOLLAR ASSESSMENT

SOME see in the re-election of President Truman a mandate to Congress to pass a compulsory national health insurance bill. If this proposal had been a plank in the Democratic Platform, such a view would have some weight. Simply because the President has gone on record as approving the Wagner-Murray-Dingell Bill and was re-elected does not mean that everything he has favored should be considered by Congress as a mandate. The Democratic platform states, "We favor the enactment of a national health program for expanding medical research, medical education and hospitals and clinics." Compulsory health insurance is not a part of the party platform.

Since the election, Oscar Ewing, Social Security Administrator, has been carrying on an active one-man campaign by radio, press conferences and announcements issued from his office insisting on the need for this legislation and making extravagant statements about what nationalized medical care would do for the health of the people. He has tried to break down the confidence of the public in the medical profession by every known technique and has made such statements as the lives of 140,000,000 persons are more important than the wishes of 180,000 physicians. This, of course, infers that the profession is opposed to this legislation for selfish reasons. If Ewing's statements that 300,000 lives could be saved if only his proposals were adopted and that 70,000,000, or half of the population, are without proper medical care were true, he would have a good argument. No one can deny that medical care in these United States is better under the present private enterprise than in any other country in the world under governmental control of medicine. Governmental control in this country would similarly result in deterioration in medical practice.

We have had, since November 2, a sample of the tactics which are to be used by the proponents of national health insurance. These individuals have the advantage of the use of millions (some estimate $70,000,000.00) of governmental funds for propaganda use. Although such use of tax funds is absolutely unconstitutional, this practice continues.

Compulsory sickness insurance, notwithstanding misleading propaganda to the contrary, is a variety of socialized medicine or state medicine and possesses the evils inherent in any politically controlled system. It results in deterioration of medical care. This is the main reason why we, as a profession, oppose it.

We repeat the statement that state medicine is a forward step in the eventual socialization of the entire national economy. We, as a profession, are not alone in our championship of private enterprise, and we should and will have powerful backing from others who value freedom of enterprise rather than socialism.

The issue is becoming more clear-cut as one between voluntary sickness insurance and compulsory government insurance. It is perhaps not generally known that over 32,000,000 individuals are now protected by Blue Cross hospital insurance; that the number of individuals covered by Blue Shield medical policies has jumped from 2,845,000 in 1946 to over 10,000,000 in 1948; that commercial indemnity companies cover an additional 20,000,000 for hospital care, 15,000,000 for surgical and 2,000,000 for medical care. Soon it will be as foolhardy not to insure against catastrophic sickness as against fire. Thus, voluntary insurance is doing much and will do more to help meet the admittedly high cost of sickness, and this is a good argument against the need for compulsory insurance.

If the public wants compulsory health insurance with at least a 4 per cent wage deduction, with increased bureaucracy and regulation in Washington, they will obtain it. We believe that a well-informed public will prefer to continue the present status of medical practice. The medical profession has accepted the task of informing the public. By unanimous vote of the House of Delegates assembled in St. Louis in December, our delegates

pledged our membership to self-assessment of $25.00 per member to provide the necessary funds to carry out the enormous task of informing the public about the issue. We have the handicap of unscrupulous opponents with many more millions at their disposal for propaganda purposes. Ours is not an impossible task. The story of Governor Warren's effort to put over state medicine in California is reassuring. The medical profession of the state assessed itself $100 a year for three years and by a superhuman effort was able to combat the opposition of a coalition governor and the labor unions and prevent the passage of the bill by a majority of one vote in the legislature.

Physicians pay no dues to the AMA. County society membership automatically makes them members of the AMA. Subscription to an AMA publication makes them fellows of the Association, and such subscriptions barely cover the cost of the publication. Even the increase in subscription dues (so-called Fellowship dues) from $8 to $12 in 1947 has not prevented the Association from going in the red.

We sometimes hear our fellow members inquiring why the AMA does not do something to stem the recent current towards government control of medicine. The AMA is now going to do something and requires the contribution of $25 from every member. A national planning committee has been appointed. The Washington office will be enlarged, and publicity experts will be employed. The bulk of the money raised will be used to inform the public on the issues involved. With the knowledge of the seriousness of the present situation which we have attempted to outline, there should be no dissenting voice.

PUBLIC RELATIONS

ON December 3, 1948, the Friday preceding the interim session of the American Medical Association held in St. Louis, representatives of forty-three states and Hawaii met to discuss public relations. The meeting was such a success that a similar but expanded meeting will be held at the next interim session.

Some interesting thoughts were expressed which merit emphasis.

No matter how efficient any group may be, it has to be sold to the public. This does not mean that every individual physician or medical group should blow its own horn, but it does mean that the accomplishments of medical science and the superiority today of medical attainments in our country over those in any other country should be publicized. We, as a profession, have been somewhat, but not wholly, lax in publicity activities. Such publications as *Hygeia*, radio broadcasting and newspaper articles on health subjects have partially supplied the desire on the part of the public for medical information. Yet the newspapers complain of the difficulties they encounter in obtaining medical news. Provision should be made for news releases in connection with all medical meetings by some designated individual or committee.

After all, the individual physician is the best medical publicity agent in the world. There is nothing new in this statement. Physicians have always used their personal contact with patients in building their practices. But relatively few realize their opportunities in daily contact with patients for disseminating the facts relating to the advantages of the American system of private practice over governmental control.

The physician as an individual can sell the present system of private practice in other ways to the public. He can see to it, when unable to make a call or when the nature of the case is outside his particular field, that the call is filled. He can consider the patient's pocketbook in the matter of unnecessary calls, needless hospitalization and laboratory procedures and overcharging. Avoidance of unnecessary operative procedures should not have to be mentioned. The application of the Golden Rule is all that is necessary. The doctor who breaks the Golden Rule in these respects more than counteracts the good public relations accomplished by the many.

We, as a profession, have laid ourselves open to considerable criticism, in that patients too often encounter difficulties in obtaining a physician's services at night or in case of an emergency. A constructive step in correcting this situation and in thus improving our public relations is the institution of a twenty-four hour physicians' telephone service at a local hospital or a physicians' exchange to provide for substitutes and for night calls. A little publicity and co-operation on the part of the local profession will assure the successful operation of the plan. The Council on Medical Service and Public Relations of the Wisconsin State Medical Association has recently

asked all component societies to take such action immediately.

The personal relationship between the patient and his physician constitutes the charm of private practice, and the scientific side of medicine or financial return must not be allowed to spoil that relationship.

EXPERIENCE WITH NITROGEN MUSTARD AND URETHANE IN THE LEUKEMIC STATES

THE use of nitrogen mustard as a therapeutic agent for lymphoblastoma and other neoplastic diseases is suggested by the fact that its qualitative effects are similar to, or identical with, those produced by roentgen rays or other types of irradiation. In experimental work, it was demonstrated that relatively small doses of the mustards could inhibit mitosis in actively proliferating cells without exerting demonstrable effects on nonproliferating cells. Somewhat larger doses resulted in evidences of nuclear and cytoplasmic injury. Clinically, a course of treatment usually consists of four daily intravenous injections of the drug in a dose of 0.1 mg. per kilogram of body weight. The dose of nitrogen mustard which is therapeutically effective for most patients will be followed, in two to three weeks after its administration, by lymphopenia, granulocytopenia and thrombocytopenia. Moderate anemia also may occur.

This action on the hematopoietic system makes mandatory re-examination of the blood in the month following treatment. It seems obvious that the susceptibility of the bone marrow to the depressing action of nitrogen mustard varies considerably among different patients. The immediate toxic effects consist of nausea and vomiting, coming on within three or four hours after administration and persisting for several hours. These effects often diminish in severity during the course of injections. As a rule, a period of at least four to six weeks is allowed to elapse between successive courses of treatment.

In the treatment of lymphoblastoma, it has not yet been determined whether nitrogen mustard can best be employed as the sole therapeutic agent or an adjunct to irradiation. The qualitative clinical response of previously untreated patients apparently is identical with that produced by irradiation in similar cases. As is true of roentgen therapy in cases of lymphoblastoma, the effectiveness of nitrogen mustard tends to diminish as repeated courses are administered.

In cases of Hodgkin's disease of long standing, in which the lesions have become refractory to roentgen therapy, nitrogen mustard often results in transient subjective improvement and occasionally produces a remission; usually, however, it cannot be expected to delay significantly the progress of the disease. Lesions of Hodgkin's disease which involve nonlymphoid organs usually do not respond well to this treatment. In general, the results obtained in treatment of lymphosarcoma have been less satisfactory and more unpredictable than those obtained in treatment of Hodgkin's disease.

In treatment of mycosis fungoides and cutaneous lymphoblastoma, nitrogen mustard has proved to be a valuable adjunct to irradiation therapy. Further remission of these conditions may be produced by nitrogen mustard after the lesions have become more or less refractory to the effect of roentgen rays. The two forms of therapy combined may well be effective where either alone is inadequate.

In treatment of malignant neoplasms other than the lymphoblastomas, some transient improvement has been obtained in cases of bronchogenic carcinoma. The outlook for the patient who has an inoperable lesion of this kind, however, has not been altered by introduction of nitrogen mustard therapy. Other malignant lesions have responded poorly or not at all to this agent.

The effect of nitrogen mustard on patients with chronic myelogenous leukemia or chronic lymphatic leukemia has been noted to be about equal to what might be expected from roentgen therapy under similar clinical conditions. Significant improvement cannot be expected in cases of acute leukemia.

Some encouraging initial results have been obtained in cases of polycythemia vera following nitrogen mustard therapy. It is believed that, as in leukemia, the effects may be shown to be at least as good as those obtained with irradiation.

The introduction of nitrogen mustard has opened a new and interesting field in therapeutics. First, the agent apparently exerts the same qualitative effects on tissues as does irradiation but is comparatively inexpensive and easily administered. Second, methyl-bis (beta-chloroethyl) amine hydrochloride, which is the nitrogen mustard most

frequently used clinically, is only one of a large family of similar compounds, and it is hoped that continued investigation will bring to light an agent of this type which will be therapeutically effective without exertng the undesirable toxic effects to which reference has been made. Meanwhile, much remains to be accomplished in the way of clinical investigation to determine what may be expected, under given clinical conditions, from the compounds now available.

In investigations of the action of urethane (ethyl carbamate) on tumor-bearing animals, it was incidentally found that in many cases there was a decided decrease in the number of leukocytes. This resulted in the therapeutic trial of this material in cases of leukemia, lymphosarcoma and allied diseases. It has been observed that normal leukocytes are more refractory to urethane than are leukemic cells. The mode of action of urethane is not understood, but it appears, on the basis of studies to date, that the action is associated primarily with inhibition of mitosis of immature cells.

Urethane has been used for too short a time to permit the formation of any definite conclusions as to its efficacy in leukemic states. This material does produce, in chronic forms of leukemia, palliative changes that are more or less constant. In acute forms of leukemia, little or no benefit is obtained from use of urethane, although the number of leukocytes in the peripheral blood may become rather rapidly reduced and a tendency for some maturation of immature forms may become evident. However, studies of the bone marrow have shown little if any change in the degree of immaturity. The clinical process continues to be acute and in no way is there sufficient change to warrant the use of urethane on other than an experimental basis in acute leukemia. On the other hand, the course of the chronic leukemias is somewhat modified by administration of urethane and the response of chronic myelogenous leukemia is better in general than that of chronic lymphatic leukemia.

Among different patients, there is great variation in tolerance to the drug and in the rapidity with which immature cells disappear from the peripheral blood. In some cases, relatively small doses of the drug—45 grains (3 gm.) administered daily for eight or nine days—will result in rapid remission; the blood will appear to be practically normal and there will be a parallel decrease in the degree of immaturity of the cells in the bone marrow. In other cases the response will be slow and a dose of 90 grains (6 gm.) daily for several weeks may be required to bring about remission.

An occasional person will prove to be unable to stomach the drug but usually, if the initial dose is small, 30 to 45 grains a day, untoward gastrointestinal reactions are minimal.

Chronic lymphatic leukemia has not responded particularly well to urethane although an occasional patient may experience a satisfactory remission. The same observation applies to patients with chronic leukemic reticulo-endotheliosis. Experience in cases of chronic myelogenous leukemia indicates that administration of urethane will control the disease fairly well hematologically and clinically, although there is no evidence that use of the substance will prolong life. With a small daily dose of urethane, the leukocyte count in most cases can be kept at a fairly satisfactory level (around 20,000 leukocytes per cubic millimeter of blood) for long periods. However, in spite of this, somewhat fulminating leukemia has developed in an occasional case, as evidenced by the character of cells obtained from the bone marrow on sternal aspiration. Interestingly, the picture found in the peripheral blood remains characteristic of a relatively chronic condition in these cases. Experience at Rochester has been that patients have progressively failed and have died with all the clinical evidence of fulminating leukemia.

Because of the convenience in administration of urethane, it offers definite advantages in palliative treatment or attempted control of the disease, but careful observation of the patient should be carried out at intervals of two weeks to a month and, if any elevation of temperature or other unexplained change in the general appearance of the patient should develop, administration of the drug should be discontinued. These, in our experience, may represent early signs of an acute change in the leukemic process. Sternal aspiration at such a time should be performed to confirm the diagnosis.

At present, in cases of chronic leukemia, palliation of symptoms can be obtained by use of various substances, but there is little evidence to date that such palliation greatly prolongs the life of a given individual. Occasional patients with chronic leukemia have, for various reasons, failed

to receive definitive treatment but have lived for relatively long periods, with few symptoms. Similarly, the clinical course of some persons who have received treatment at relatively infrequent intervals has been surprisingly satisfactory. Such instances must represent variations in the natural history of the disease processes concerned. Without a large control series of untreated patients, it does not seem justified to state that any known treatment significantly prolongs the life of the patient who has chronic leukemia.

C.H.W.

EWING'S PROPAGANDA FOR NATIONAL HEALTH INSURANCE

Recently Federal Security Administrator Oscar Ewing spoke before the convention of State and Territorial Health Officers in Washington on "The Job Ahead." Mr. Ewing said that national health insurance was the keystone to his proposed health plan.

Mr. Ewing said in part:

"Success (of the government health plan) depends on what the people themselves are willing to do about it.

"For that reason we must start laying the groundwork now. Every community must organize its own committees to analyze the plan in relation to its own community resources and community needs. These committees must establish liaison with similarly organized state groups under your leaderships charged with coordinating these resources and meeting demonstrated needs in a state-wide program.

"Equally important is the need to start, now, a state and local campaign of education to explain the scope and purpose of the plan and to demonstrate what it will mean to the health and well-being of every citizen of the community—to rally all business, professional and civic organizations, together with the churches and the labor unions, for an all out effort to start the ball rolling.

"To set such a project in motion requires responsible state and local leadership. It requires the unstinted faith and determination of men and women who can spearhead such a campaign and carry it through to a successful conclusion.

"I am putting this up to you, as an organization and as individuals, to undertake this responsible job. We are set to go on the most comprehensive program of health that has ever been offered to the people of the United States.

"If we all put our shoulder to the wheel we can translate this program into a living reality. And with the facilities we shall be able to command we shall create a standard of health and well-being for the entire country, such as no nation has ever dreamed."

Those six paragraphs from Mr. Ewing's talk are a clear-cut indication that the Federal Security Administration is going to the communities and people direct in its fight to put through a compulsory sickness insurance program.

Read Mr. Ewing's pleas again. Every sentence can be applied to the medical profession, aimed, of course, at educating the people to the dangers of compulsory sickness insurance. Every state and county medical society can take a lesson from Mr. Ewing's remarks and apply them to their own job ahead.

Mr. Ewing says that "success depends upon what the people themselves are willing to do about it." How true! That applies just as well in our fight.

Again, Mr. Ewing says that "to set such a project in motion requires responsible state and local leadership." Again, how true! The medical profession already has that leadership in state and county societies.

In his plea to get to the grass roots, Mr. Ewing urged his own workers to put their shoulders to the wheel. We must do that, too, within the states and counties of the nation so that the people everywhere will realize that any form of compulsory sickness insurance will necessitate a new payroll tax and the addition to the public payroll of thousands of administrative workers. We must push our 10-point program. Our job is, to put it in Mr. Ewing's words, "a state and local campaign of education," too. Only, we must stress the fact that the government isn't going to give the people anything for nothing because the government itself cannot produce wealth.

Urges Change of Tax Law to Favor Doctors

Self-employed professional men, such as lawyers and physicians, are discriminated against by our present federal income tax laws according to Frank G. Dickinson, Director of the AMA Bureau of Medical Economic Research.

Speaking at the Medicolegal Symposium of the Chicago Bar Association recently, Dr. Dickinson pointed out that the federal income tax laws permit self-employed individuals to use tax free funds to purchase pensions for their employes but not for themselves. Such employer contributions are subject to tax when the employe receives the pension but are not taxable to the employe during his working years when the employer is making the contribution.

Thus, many company doctors and company lawyers, who are employes, can look forward to pensions for their retired years. But the lawyer or doctor in private practice cannot use any tax free funds to finance a pension for himself or his partners.

"This feature of our tax law demands that a professional man incorporate himself in order to get the same privilege that a professional man or any other employe of a large firm can enjoy," said Dr. Dickinson. "The trouble is that most professional men cannot or will not incorporate. Many top management executives of corporations can look forward to five figure pensions when they retire in addition to the small pension provided by Social Security."

A movement, he explained, is now underway to get the federal income tax law amended to include physicians, lawyers and other professional people. It is hoped that the next Congress will take up legislation to eliminate this discrimination against self-employed professional people, including 99 per cent of the physicians who are engaged in private practice.

—AMA Secretary's Letter, November 29, 1948

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

AMA UNANIMOUS ON PLANS TO DEFEAT SOCIALISM

Accepting the fact that some form of socialized medicine will be proposed in Congress very soon, but refusing to accept the inevitability of its passage, the American Medical Association's House of Delegates, in Interim Session at St. Louis, Missouri, voted unanimously to build up a 3½-million-dollar educational fund.

The money will be used to "guide a nationwide plan of education on the progress of American medicine, the importance of conservation of health and the advantages of the American system in securing a wide distribution of high quality medical care."

Thus begins one phase of the fight to keep socialism from diluting American democracy. Money is needed because money makes possible the dissemination of facts. These facts must be cemented into a defense to blunt the edges of the weapons being used by the propagandists, notably those on the federal security payrolls.

The American people must become acquainted with the unvarnished side of the health-for-everybody-for-free plan. Ewing and his Utopia-painters and legislators of the Wagner, Murray, Dingell stamp have been hard at work for a long time, following a familiar pattern of mass psychology: establish the need, dress up the product to fit the need, sell by repetition.

Selective service rejection rates from World War II are the most recent tool to fall into the hands of the propaganda artists. By lumping together all reasons for rejection, including illiteracy and underweight, counting successive rejections for a selectee as separate rejections, failing to figure into the percentages the number of draft age men who volunteered for service, the ism-men turned what was really a tribute to the progress of American medicine and a demonstration of its universal availability into a condemnation of the profession and the present system of medical care.

This is typical of the "message" which federal tax funds are being used to carry. The refutation, when it came, was tardy and inadequately publicized. Dr. Maurice Friedman of Washington, D. C., exposed the misuse of the statistics, which were never intended as a survey of the nation's health or of the health of any segment of the population, anyway. But too many people received the first message, not the latter one. Cases like this show that "good news is no news," the reverse of the old wheeze, is almost always true and a factor to be reckoned with. The medical profession can't expect to make headlines with such information as "The United States has good medical care"; whereas, Ewing and Falk gain columns for their cause by misquoting and falsifying various studies of sickness and health and the availability of doctors and hospitals to give the two-fold impression that:

1. The health of the nation is bad, because
2. Too many of its inhabitants cannot afford medical care.

The truth is that the health of the nation is good, better by comparison than any other nation of similar size and heterogeneity of population. That compulsory health insurance, federal medicine, or whatever alias socialized medicine uses, would make the health of the nation better is untrue and must be constantly refuted by every possible means.

What would happen is easy to visualize: in the first place, taxpayers would be staggered by the extra assessment for universal medical care; doctors would be unable to cope with the increasingly large number of malingerers and chronic complainers who would wend their way daily to the doctors' offices; hospitals would be filled with them too so that emergency cases would not receive the immediate attention that they warranted; bureaucrats on the federal payroll would multiply with unprecedented speed as the

maze of report-filing, complaints, suits, charges and counter charges grew in complexity.

From socialized medicine, it would be an escalator ride to completely socialistic government.

These are the facts the people must have. They must be repeated over and over again. Scientific medicine has assumed its natural role of responsibility to convey these facts to people of every age, income, race, creed and color. This will take money. But the price tag on socialism makes the $25-per-doctor assessment look paltry indeed. For socialism would not only drain the people's financial resources, but their heritage of freedom as well.

There is another aspect to this problem also. Every doctor, aware of the implications of socialized medicine, probably wonders at some time or other how the whole fantastic scheme gains credence anywhere. The answer may be found in the doctor's own office, when he treats his patients brusquely, fails to explain their ailments or, when he explains them, does so in scientific language which the lay person does not understand. The answer may stem from his unexplained refusal to answer night calls or to care for a man with a heart attack because he is not a heart specialist. It may come from excessive charges, fee-splitting or unethical practices of various sorts.

Certainly it remains evident that far too many lay persons are being enthralled by the glib words of the government medicine merchants and while scientific medicine has made a strategic move in planning the educational campaign it has, still it is the responsibility of the individual doctor to serve not only as a physician, but as a public relations representative for his profession.

BLUE CROSS-BLUE SHIELD PLANS NEGATED BY AMA

Blue Cross-Blue Shield proposals for (1) association and (2) formation of a national insurance company were rejected by the American Medical Association's House of Delegates after thorough investigation and study.

The problems which brought forth these two suggestions, however, were recognized by the House and a substitute plan of action was agreed upon. Formation of a national enrollment agency and further development of co-ordination and reciprocity among the local plans was voted. It was generally felt that this system would facilitate the work of these two organizations and would dispatch the problems which have arisen, among them the difficulty of enrolling employes of national corporations, whose managements seek uniform contracts.

Rumors growing out of the discussions in the House indicated that AMA, in failing to adopt the ideas put forward by Blue Cross and Blue Shield leaders was refuting the entire Blue Cross-Blue Shield program. Evidence that this is not true is the action taken by the House in reaffirming the authority of the American Medical Association's Council on Medical Service to promote the voluntary prepayment medical care plan movement in America.

HARNESS ADVOCATES MORE POLITICAL ACTION BY DOCTORS

Forest A. Harness, chairman of the House Committee on Publicity and Propaganda, participated in a symposium on medical legislation during the AMA Interim Session and had this to say about doctor participation in politics:

"At the academic level, I know medical people have made tremendous efforts, both to resist the encroachments upon free institutions, and to meet the growing threats to your own profession. . . . But what effective effort has the profession ever made at the practical level? How much time, effort and substance have you ever devoted to everyday, down-to-earth, shirt-sleeve politics? Can you recall a single instance when the profession, or significant numbers within it, vigorously endorsed and supported a political party, or individual candidates? . . . Try to adjust your thinking to the inescapable fact that trends are not started or stopped in council chambers, but on street corners. Efforts expended at academic levels, and possibly directed to Congress at a given time, may speed or retard a trend. But if the efforts are to be permanently effective, they must reach the masses who write the decisions each two years in national elections.

"I think it is a great pity that people like you, who are best fitted by ability and training to provide leadership, have remained aloof. I think it is particularly regrettable that our medical people, who enjoy positions of confidence and trust hardly equalled by any other group in the American community, have so far neglected to prescribe for the body politic as part of their daily ministrations."

GRASS ROOTS CONCEPT ACCLAIMED AT SESSION

The Grass Roots conference, held November 30 as part of the AMA Interim Session, to "develop a working partnership between the American Medical association and every physician," was devoted mainly to the consideration of two problems: the relation of the doctor to national

preparedness and the roles of doctor and public in the socialized medicine system.

Military, civilian and medical viewpoints were expressed and it was the consensus of opinion that the armed forces are relying on the "responsibility of the doctor" to make a special draft of physicians unnecessary. The philosophy of service which is inculcated in every physician has been well demonstrated in war as well as in peace and possibility of induction of physicians by way of selective service seems remote.

In the second half of the evening's discussion, Dr. Maurice Friedman of Washington, D. C., amplified his study of the selective service rejection figures, noting dryly, "Mr. Ewing has made so many statements that, statistically, it would be impossible if some of them were not true."

Giving examples of the Ewing formula, Friedman pointed out that any set of figures, real or imagined, suits Mr. Ewing's purposes. It is an accepted fact that health studies by counties are impractical—sparsely populated counties with access to hospitals in adjacent counties could not support and have no real need for hospitals within the actual county boundaries, yet Ewing uses the fact that a number of counties in each state do not have hospitals as a selling point for compulsory health insurance.

Ewing asserts again and again that the mortality and morbidity rate in the United States could be slashed to almost nothing if only the people, all the people, had money enough to buy medical care or, rather, that this medical care was furnished them by the government. But Friedman has ably demonstrated by comparison that the mortality rate has no direct connection with the availability of medical care.

Ewing reasoning follows this line, Friedman declared: In the U. S. among white births, the mortality rate for males is 41.2 per 1000 live births. For females, it is 32.4. Therefore, male babies cannot afford proper care and are being discriminated against by the selfish, greedy medical profession!

AMA PASSES RESOLUTION ON REBATE QUESTION

Guided by the recommendation of the reference committee on miscellaneous business, the House of Delegates at St. Louis adopted the following resolution concerning rebates:

"Your committee has given prolonged consideration to this matter and approves that portion of the report which states that the House of Delegates reiterates condemnation of the practice of any member accepting rebates, and that the House of Delegates condemns also the practice of giving rebates by a member. It urges that the different state societies in those states in which such practices are not now illegal give serious consideration to the introduction of legislation making the practice of rebating to or by physicians illegal.

"Your committee recommends further to the component county societies that on the receipt of a bona fide complaint the disciplinary committee of that society should hold a hearing and endeavor to make an investigation of the doctor's records and accounts at society expense, and that a record of such hearings and examination should be kept for the information of the state society and, if necessary, for the Judicial Council of the American Medical Association."

WORLD WAR THREE BEGINNING IDENTIFIED

If there is a third World War, the day of the attack already has an identifying label, according to Brig. Gen. George E. Armstrong, deputy surgeon, General Department of the Army, Office of the Surgeon General. The day will be known as "C-Day"—Catastrophe Day.

Plans are being made to decentralize the military command and to make local units, including those assigned to civilian medical care, autonomous.

SOUTH CAROLINA DOCTOR GETS GP AWARD

Dr. W. L. (Buck) Pressly, Due West, South Carolina, general practitioner for thirty-two years, received the AMA General Practitioner award at the St. Louis meeting. Dr. Pressly, sixty-one, is considered an authority on rural health and sanitation in his state.

"In entering the medical field, I resolved and have sought rigidly to adhere to one idea—that my life would be one of service to mankind," said Dr. Pressly in accepting the award.

Nominations for the award came from twenty-three states. "All twenty-three nominees were distinguished general practitioners, noted in their respective states for their long and devoted service," said Dr. E. L. Henderson, chairman of the Board of Trustees.

Medical services are not commodities that can be bought in standardized packages wherever and whenever one has the money to pay for them.—Medicine in the Changing Order, Rep. New York Academy Med. Comm., The Commonwealth Fund, 1947.

Minnesota Academy of Medicine

Meeting of October 13, 1948

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, October 13, 1948. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 by the President, Dr. T. A. Peppard.

There were forty-eight members and five guests present.

Minutes of the May meeting were read and approved.

The scientific meeting following.

Dr. Vernon L. Hart, of Minneapolis, gave an interesting talk on a recent trip to Germany with three other medical men from the United States who went to Europe at the request of the Surgeon General to provide some setup for the young physicians from this country who are now located in hospitals in Germany.

Dr. Wesley Spink, of the University of Minnesota Medical School, read his Inaugural Thesis on the use of aureomycin, an abstract of which follows.

INVESTIGATIONS WITH THE ANTIBIOTIC AUREOMYCIN

(Abstract)

WESLEY W. SPINK, M.D.
Minneapolis, Minnesota

Aureomycin is an antibiotic isolated by Duggar of the Lederle Laboratories from *Streptomyces aureofaciens*. This antibacterial agent is a yellow crystalline material which is stable in this form, but its activity is rapidly lost when placed in solution. Of particular clinical interest, is the fact that the material is absorbed from the gastrointestinal tract following oral administration. Initial clinical investigations in human beings indicate that aureomycin induces only mild toxic reactions such as nausea, vomiting and soft stools.

Aureomycin has a broad spectrum of antimicrobic activity being effective *in vitro* against Gram-positive organisms such as streptococci, staphylococci and pneumococcic; against the Gram-negative bacteria, *E. coli, Aerobacter aerogenes, Salmonella, Klebsiella pneumoniae, Neisseria, E. typhosa, Brucella* and *Hemophilus influenzae*. Most strains of *Proteus* and *Pseudomonas* appear to be resistant to aureomycin. The drug has proved to be quite active against the rickettsiae, which are the cause of the human diseases: murine and epidemic typhus, Rocky Mountain spotted fever, scrub typhus, Q fever, and rickettsialpox. And lastly, aureomycin inhibits the propagation of certain of the larger viruses including lymphogranuloma venereum, granuloma inguinale and psittacosis.

Up to the present time, aureomycin has been administered orally in capsules in doses of 0.5 to 1.5 gram every six hours. A salt of aureomycin may be given intramuscularly in aqueous solutions in total daily doses up to 200 mgs. This amount is divided into three or four doses. Solutions of aureomycin may be used topically, especially for ocular infections.

The actual status of aureomycin in human infection must await further studies. The following preliminary statements may have to be modified in the future. In the treatment of gonorrhea, a single oral dose of aureomycin is followed by a lower percentage of cures than is obtained with a single intramuscular injection of 300,000 units of penicillin. The response of patients with pneumococcic pneumonia to aureomycin has been encouraging. Thus far, the results in the treatment of uncomplicated cases of typhoid fever have not been remarkable. This also applies to disease caused by Salmonella. Urinary tract infections due to Gram negative organisms have been eradicated with aureomycin with the exception of disease due to *Proteus* and *Pseudomonas*. It would appear that aureomycin is the drug of choice for the therapy of lymphogranuloma venerum, and possibly, granuloma venerum. The antibiotic has yielded encouraging results in the treatment of Rocky Mountain spotted fever and Q fever. According to Braley and Sanders the local application of solutions of aureomycin to the eyes has been followed by good results in the treatment of staphylococcic blepharitis with conjunctivitis and keratitis; pneumococcic and influenza conjunctivitis and kera- infections due to the Morax-Axenfeld diplobacillus. Encouraging results have been obtained in the therapy of viral diseases of the eye including dendritic keratitis and inclusion conjuctivitis. The drug merits trial in trachoma.

At the University of Minnesota Hospitals, investigations have been under way during the past six months with Doctors Yow, Magoffin and Braude relative to the value of aureomycin in the treatment of brucellosis. Previous to these studies it had been established that the most satisfactory specific therapy was a combination of streptomycin and sulfadiazine. It has been of interest to observe that in comparing streptomycin with aureomycin for antibrucella activitiy, *in vitro* studies showed the former to be superior to aureomycin. Furthermore, in experimentally infected chick embryos, aureomycin did not afford as good protection as streptomycin. It is too early to draw any final conclusions on the value of aureomycin in the treatment of human brucellosis. A cooperative study on therapy in brucellosis is being carried out with Dr. M. Ruiz Castaneda in Mexico City. To date, it would seem that the oral administration of aureomycin is an exceedingly effective drug for this disease.

In summary, aureomycin is an antibiotic having a wide antimicrobic spectrum. It may be administered orally, and it has induced only the benign toxic reactions. For these reasons, intensive studies in human infections are warranted.

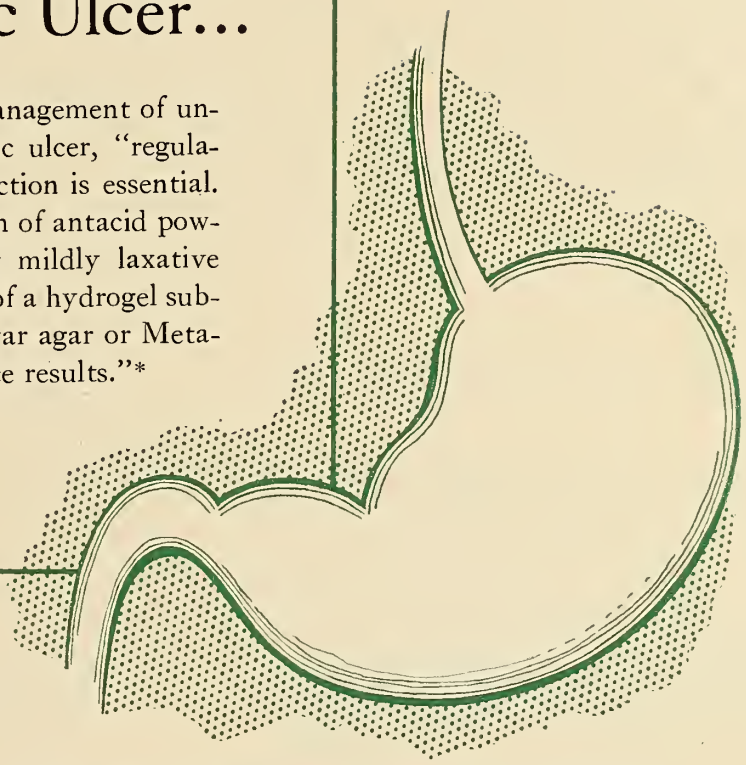
Discussion

Dr. R. T. LaVake, Minneapolis: I would like to ask Dr. Spink if blood transfusion has been used as an

(Continued on Page 92)

Bowel Regulation in Peptic Ulcer...

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

*Gerendasy, J.: Modern Treatment of Peptic Ulcer, J. M. Soc. New Jersey *43*:84 (March) 1946.

MINNESOTA ACADEMY OF MEDICINE

(Continued from Page 90)

adjuvant in these cases. When we first began the use of the sulfonamides in infections, in several cases when no beneficial results were obtained, multiple transfusions rapidly changed the whole picture for the better.

Dr. L. Logan Leven, Saint Paul: I am greatly impressed with the results of aureomycin as presented by Dr. Spink tonight. I had the opportunity to see its effect on a badly burned patient on my service at the University Hospital. This child had extensive, badly infected burns. She had developed a pyemia and had osteomyelitis of the mandible as well. She was given the usual therapy for this type of case. She was sensitive to sulfonamides and to penicillin. About the time that all therapy seemed hopeless, aureomycin was used, and a sudden improvement was noted. The temperature returned to normal, and the patient was promptly gotten into condition for skin grafting. The result in this case was most striking.

Dr. F. W. Lynch, Saint Paul: Dr. Spink listed a variety of organisms sensitive to this drug. Are we to understand that most of the other common organisms are not sensitive, or have they not yet been tried?

Dr. Spink, in closing: An answer to Dr. LaVake's question about the use of transfusions with antibiotics, there is no specific advantage in giving either whole blood or plasma with any of the antibiotics. Transfusions should be employed when there are clear-cut indications for their use such as anemia, hypoprotinemia and shock. In fact, I am exceedingly apprehensive about the indiscriminate use of blood transfusion, because of the potential danger of severe and fatal reactions. Furthermore, infusions with pooled plasma are associated with the danger of inducing homologous serum hepatitis. It is of historical interest that immune serum appeared to be an effective agent for the treatment of infections due to Group A hemolytic streptococci, and if the sulfonamides and antibiotics had not been introduced at the time, immune transfusions would have been widely used in the treatment of streptococcic disease, especially puerperal sepsis.

In answer to Dr. Lynch's question, undoubtedly other species of micro-organisms are sensitive to aureomycin. I should like to emphasize that our primary interest in this antibiotic has been with relation to brucellosis. Such observations that have been made in our laboratory with other diseases and bacteria are an outgrowth of this major interest. Although tremendous advances have been made in the management and control of infectious diseases there is still room for improvement. There is probably no more satisfaction in the whole field of medicine than that which is obtained in treating successfully, infectious diseases which only a few years ago were considered highly fatal diseases. Consider the previous mortality rate of 80 per cent for staphylococcic septicemia, compared to a present rate of less than 20 per cent; of 100 per cent for pneumococcic meningitis, compared to a present rate of at least less than 50 per cent; of subacute bacterial endocarditis with its previous death rate of around 100 per cent, and now a recovery rate of over 75 per cent.

However, as I have stated previously, there is still room for improvement and that is why a continued interest will be manifested in antibiotic therapy.

The meeting adjourned.

A. E. Cardle, M.D., *Secretary*

In Memoriam

PIERRE C. PILON

Dr. Pierre C. Pilon of Paynesville, Minnesota, died on December 16, 1948. He was eighty-four years of age.

Dr. Pilon obtained his medical degree from the University of Victoria, May 12, 1886, and began practice at Cold Spring. Later he moved to Richmond, Minnesota. In 1897 he moved to Paynesville and for a time was a member of the Stearns-Benton County Medical Society.

As a major in World War I, he was superintendent of an auxiliary base hospital at Bordeaux, France.

In 1936 Dr. Pilon was honored at a testimonial dinner given him by one hundred and fifty friends, commemorating his fifty years of practice. The same year he and Mrs. Pilon returned to France to visit friends and relatives.

Dr. Pilon had served as mayor of Paynesville, coroner of Stearns County and as a member of the Minnesota State Board of Medical Examiners.

He is survived by his widow and a brother.

THE CANCER PROBLEM

(Continued from Page 69)

due solely to metastatic carcinoma and was in no way attributable to the operation. There were no other hospital deaths in this series.

Summary

The problem of cancer diagnosis and treatment has been discussed from the standpoint of the practicing physician in a small community and the role of the practicing physician in the reduction of cancer mortality has been stressed.

A small series of cancer cases from the author's practice has been presented as a basis for this discussion. A composite analysis of similar series of cases from many other smaller communities throughout the state should be made in order to evaluate the average practicing physician's abilities and shortcomings in the diagnosis and treatment of cancer.

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(Continued from Page 64)

adequate facilities and personnel are available. Merely taking the smears and submitting them to the laboratory, where no adequate provisions are available, would not be just either to the patient or the technique.

It is clearly the responsibility of the pathologist to accept the Papanicolaou method as an aid in cancer diagnosis, and to guide the medical profession in its judicious use, by impressing upon its members the fact that the method, while it has proven its value in cancer diagnosis, is actually often more difficult, is time-consuming, and lacks definitiveness that the biopsy more easily affords. All this means special training for practicing pathologists.

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✦ Reports and Announcements ✦

NATIONAL CONFERENCE ON MEDICAL SERVICE

Palmer House, Chicago, Illinois, February 6, 1949

Morning Session—9:00 A.M.

Registration: Foyer of Red Lacquer Room Fourth Floor Palmer House.

Appointment of Committees.

Address of the President—E. F. Sladek, M.D., Traverse City, Michigan.

Legalized Medical Research.

Medical Problems.—Chris J. D. Zarafonetis, M.D., University of Michigan.

Legal Problems.—George Wakerlin, M.D., University of Illinois.

Title to be announced.—James R. McVay, M.D., Kansas City, Missouri; Chairman, Council on Medical Service, AMA.

Progress of the World Health Organization.—Frank Calderone, M.D., Director, American Office, World Health Organization.

Progress of the World Medical Association.—Creighton Barker, M.D., Executive Secretary, Connecticut State Medical Association.

Medical Program of the United Mine Workers of America Welfare and Retirement Fund.—Warren F. Draper, M.D., Executive Medical Director.

Subscription Luncheon—12:15 P.M.

Afternoon Session—1:00 P.M.

The AMA puts on its Fighting Togs.—(Speaker to be announced.)

What's Happening in Washington This Week.—James D. Boyle, United Public Health League.

Discussion—To be opened by Joseph S. Lawrence, M.D. Director of the Washington Office, AMA.

Panel Discussion on Postgraduate Education of the Doctor.

(a) Responsibility of Medical Schools in Continued Postgraduate Education of the Doctor.—George N. Aagaard, Director of Postgraduate Medical Education Program, University of Minnesota.

(b) Function of the State Medical Society in Postgraduate Work.—C. W. Smith, M.D., Harrisburg, Pennsylvania.

(c) Survey Findings on Specialization in Colorado.—Harold I. Goldman, M.D., Denver, Colorado.

Can Corporations Such as Hospitals Legally Engage in the Practice of Medicine?—Wilbur Bailey, M.D., Los Angeles, California.

Report of Committees and Election of Officers.

Physicians are urged to attend and take part in discussions.

POSTGRADUATE COURSE IN DISEASES OF THE CHEST

The Council on Postgraduate Medical Education of the American College of Chest Physicians and the Laennec Society of Philadelphia announce a Postgraduate Course in Diseases of the Chest to be held at the Warwick Hotel, Philadelphia, Pennsylvania, February 28 through March 5, 1949. This course will emphasize the recent developments in all aspects of diagnosis and treatment of diseases of the chest.

The course is open to all physicians, although the number of registrants will be limited. Applications will be accepted in the order in which they are received. The tuition fee is $50.00.

Application may be made through the Executive Offices of the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

RESEARCH FELLOWSHIPS

Announcement of the availability of ten research fellowships to be awarded for one year in the fields of medicine, dentistry, and pharmacy has been announced by the University of Illinois Graduate College in Chicago.

The fellowships carry stipends of $1,800 per year for medical and dental graduates and $1,200 for pharmacy graduates, with exemption from tuition fees for all appointees. Registration in the Graduate College for credit toward M.S. or Ph.D. degrees is required.

Candidates should indicate the field of research in which they are interested and submit transcripts of their scholastic credits, together with the names of three former science teachers as references. Appointments will be announced March 1, 1949, or shortly thereafter. The fellowship year begins on July 1, 1949, or September 1, 1949.

Formal application blanks may be secured from the Secretary of the Graduate Committee, 1853 W. Polk Street, Chicago 12, Illinois.

INFANTILE PARALYSIS FELLOWSHIPS

The National Foundation for Infantile Paralysis announces that a limited number of research fellowships are available in virology, orthopedic surgery, pediatrics, epidemiology, neurology, physical medicine and public health. Requirements for the appointments, which are sponsored by the Foundation, include medical training and two years of training at the residency level in the particular field.

Details may be obtained from the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, New York.

(Continued on Page 96)

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LET'S TALK ABOUT HEALTH

The following broadcasts will be given by Dr. D. A. Dukelow, Director of the Health and Medical Care Division of the Community Chest and Council of Hennepin County, in January and February.

1949

Jan. 3. Public Health Legislation.
Jan. 10. Winter Health Hazards.
Jan. 17. Our New Blood Bank.
Jan. 24. Allergy.
Jan. 31. Live longer and Like It.
Feb. 7. Saving Children's Teeth.
Feb. 14. Have a Heart.
Feb. 21. What Is Mental Illness?
Feb. 28. Report on Public Health Bills in Congress.

COURSES IN FOOD HANDLING

To help in protecting the public against food-borne diseases, courses for food handlers and other restaurant employes will be given at several centers by the Minnesota Department of Health during the coming year. These courses are given under the direction of the Division of Hotel and Resort Inspection, and are open free of charge to persons concerned in the handling of foods and drinks in hotels, restaurants, bars, schools, hospitals, and institutions.

The courses, each two hours in length, emphasize the points to observe in preventing outbreaks of food poisoning and the importance of personal hygiene and safe food handling and cleaning techniques.

The Division of Hotel and Resort Inspection was created by the State Legislature forty-five years ago, with the primary purpose of regulating the operation of inns and lodging houses. Since then this division has expanded its activities to include sanitary supervision of cabin camps, tourist homes, taverns, resorts, hotels, restaurants, and soda fountains.

At present the personnel of the division consists of a director, Mr. Harold S. Adams, also nine inspectors and five clerical workers. The division is responsible by law for licensing all the establishments named above. The law also makes it mandatory that an inspection be made at least once a year of all places under licensure. The inspectors check such aspects of food sanitation as refrigeration of perishable foods, proper food handling methods, safe storage and display of foods, dishwashing operations, locker and rest room sanitation, insect and rodent control. They also consider aspects of fire prevention and protection, including proper means of egress, condition of fire extinguishers and fire hose, removal of combustible materials, safe wiring and proper designation of exits by lights and signs.

Since there are more than 18,000 licensed establishments in Minnesota, it is evident that inspections cannot be made as frequently as would be desirable. However, the division can point with pride to much accomplishment in promoting safety and sanitation in hotels and other establishments throughout the state.

TWO CONTINUATION COURSES

The University of Minnesota announces a continuation course in cardiovascular diseases to be given at the Center for Continuation Study on February 14 and 15, 1949. The course is intended for general physicians and is sponsored by the Minnesota Heart Association.

The University of Minnesota announces a continuation course in pediatrics to be given at the Center for Continuation Study on February 7, 8, and 9, 1949. The course is intended for general physicians and is sponsored by the Minnesota Department of Health.

MINNESOTA SOCIETY FOR THE PREVENTION OF BLINDNESS

The annual meeting of the Minnesota Society for the Prevention of Blindness and Conservation of Vision was held at the Coffman Memorial Union at the University on December 14, 1948.

The meeting was presided over by Mr. Amos S. Deinard, president, who told of the purpose of the society, the prevention of eye accidents and the early treatment of eye diseases to conserve vision. The society has been sponsoring a state bill to prevent the sale of air rifles which are the cause of so many accidents to the eyes and which Mr. Deinard stated serve no useful purpose.

Miss Mary Davis, daughter of the late Dr. William Davis, was elected president for 1949.

GOODHUE COUNTY SOCIETY

The annual meeting of the Goodhue County Medical Society was held in Red Wing early in December, with election of officers highlighting the program.

Dr. G. W. Bagby, Cannon Falls, was elected president of the organization, succeeding Dr. M. G. Flom of Zumbrota. Other officers elected were Dr. L. E. Steffens, vice president, and Dr. J. F. Brusegard, secretary-treasurer, both of Red Wing. For the second successive year the society named Dr. M. R. Williams of Cannon Falls the outstanding general practitioner in the county.

RAMSEY COUNTY SOCIETY

At a meeting of the Ramsey County Medical Society in Saint Paul on November 29, Dr. Warner Ogden was named president-elect, to take office in 1950. Dr. J. R. Aurelius was installed at the meeting as president for 1949. Other officers elected were Dr. William A. Kennedy, vice president, and Dr. Laurence Hilger, secretary-treasurer.

SIOUX VALLEY MEDICAL ASSOCIATION

The annual meeting of the Sioux Valley Medical Association will be held at the Hotel Cataract, Sioux Falls, South Dakota, on January 25, 26 and 27. Plans for the meeting call for emphasis on subjects of primary interest to the general practitioner. All physicians are welcome to attend.

WASHINGTON COUNTY

The annual meeting of the Washington County Medical Society was held November 14, 1948. Officers elected for 1949 were: Dr. W. R. Humphrey, president; Dr. C. H. Sherman, first vice president; Dr. G. M. Ruggles, second vice president; Dr. E. S. Boleyn, secretary-treasurer (re-elected).

Members of the County Welfare Board met with the society and some disputed fees for attending hospitalized indigents were adjusted satisfactorily.

AMNIOTIC FLUID AND MECONIUM EMBOLISM

(Continued from Page 72)

epithelial squamae in the capillaries, arterioles and small arteries of less than 1.0 mm. in size in the lungs.

The autopsy report of the fetus in Case 1 is included in the paper because the death was attributed to the aspiration of the meconium-stained amniotic fluid. It is generally agreed that under conditions of severe asphyxia, violent fetal respiratory efforts occur, and that there is often an associated expulsion of meconium into the amniotic fluid. This apparently occurred in Case 1 where the asphxyia probably occurred as a result of the placenta previa. It may be further assumed that this asphyxia ultimately resulted in the death of both mother and child.

Summary

1. Two cases of maternal pulmonary embolism by meconium and amniotic fluid are reported.

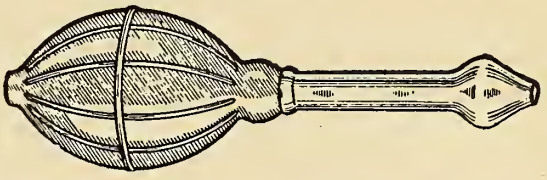
2. In labor the fluid and meconium probably are forced into the uterine sinuses by the strongly contracting organ. The fluid can also enter the maternal circulation during cesarean section.

3. The particulate matter of the amniotic fluid, i.e., the meconium, vernix caseosa, lanugo hairs, and epithelial squamae are responsible for the embolic plugging of the pulmonary circulation.

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$15,000.00 accidental death *$75.00 weekly indemnity, accident and sickness*	**$24.00** *Quarterly*
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Surely the most logical place for the magazine is the physician's reception room. As early as 1920, the need for a health magazine was recognized by many physicians and two years later the American Medical Association's House of Delegates authorized its publication. In April of this year, *Hygeia* completed its twenty-fifth year of service to the public.

Designed for a lay public, the magazine contains interesting, informative material for those of the profession. Special rates make it possible for physicians and dentists and their families to receive the magazine at half its cost to the public—$1.50 per year, $2.50 for two years and $3.25 for three years. The regular subscription rate, however, compares favorably with other quality magazines of general circulation.

Traditionally, the Woman's Auxiliary is charged with the responsibility of promoting *Hygeia,* through Parent-Teacher groups, boards of education and similar organizations interested in health education. Unfortunately, the bulk of this work has been carried on principally by a small number of Auxiliaries. We have over 600 organized county units, but 90 per cent of the orders come from 25 per cent of the county auxiliaries; another 25 per cent showed interest, but more than 50 per cent took no part in the promotion of the magazine.

Minnesota has twenty-eight counties. Eight counties did not report a single *Hygeia* subscription last year. Let's redouble our efforts in behalf of America's greatest health publication. Let's make this Minnesota's biggest *Hygeia* subscription year.

AUXILIARY INFLUENCE MUST BE AN INFORMED INFLUENCE

Mrs. William Von der Weyer

At the beginning of the year, with all the enthusiasm of a new recruit, your Bulletin chairman determined to make every one of the 1,672 members in the State Auxiliary a subscriber to the *Bulletin of the Woman's Auxiliary to the AMA.* Inspired by the zeal of our president, Margaret Wahlquist, and with the desire to make hers a successful year, subscription blanks were sent to all County Auxiliary presidents, urging them to get new and renewed subscriptions. So far, only a few of these have been returned, but it is expected that many more will be coming in during the post holiday months.

If we, as doctors' wives, are to have any influence in health matters in our state, we must have *The Bulletin* as well as other health literature to help us inform our neighbors and friends as to medical legislation, new therapeutic practices, new medicines, new food products, the nursing situation, and many other subjects which are aids to human welfare.

Did you know that the number of Auxiliary members in the United States is almost 50,000? Think of the opportunity so many of us have of bringing our informative messages to 3.5 million members of other women's organizations throughout the nation! So *please* subscribe to *The Bulletin.* You'll be doing yourself a great good—just send your dollar to: Mrs. Wm. Von der Weyer, 601 Montcalm Place, St. Paul, Minnesota.

FALL BOARD MEETING

Mrs. W. A. Merritt

Three women were given regular appointments and three, special appointments, at the fall board meeting of the Woman's Auxiliary to the Minnesota State Medical Association, held September 25, in the Italian Room of the Radisson Hotel, Minneapolis, following the Auxiliary Workshop. The assignments are as follows:

Mrs. S. S. Hesselgrave, Parliamentarian; Mrs. E. V. Goltz, Advisory Committee; Mrs. Martin Nordland, Advisory Committee; Mrs. Walter Haven, Workshop Committee; Mrs. L. S. Arling, Newsletter; Mrs. Harold G. Benjamin, Roster.

Elected to the Nominating Committee were: Mrs. E. V. Goltz, Mrs. L. P. Howell, Mrs. A. Christiansen, Mrs. Henry W. Quist, Mrs. Hobart Johnson; alternates, Mrs. John Butler and Mrs. J. L. Bowen.

Attended by thirty-six officers and county presidents, the meeting went on record as endorsing the cancer essay and poster contests throughout the state, giving to these projects the sum allocated in the Auxiliary's budget for cancer and co-sponsoring the essay and poster contests.

Fifty dollars was earmarked for prizes for the state tuberculosis essay contests.

County presidents were reminded by Mrs. Harold W. Wahlquist, state president, to collect 25 cents per capita for the Dr. O'Brien Memorial Fund, in line with the Auxiliary vote last spring.

Mrs. S. S. Hesselgrave, parliamentarian, explained the increase in National Auxiliary dues to one dollar per member, the fund to be used for periodicals sponsored by the national Auxiliary when revenue justifies their publication.

Silent tribute was paid by the group to two deceased members of the State Auxiliary board: Mrs. James S. Reynolds and Mrs. James Blake, Sr.

Mrs. H. W. Wahlquist and Mrs. Luther H. Kice, national president spoke briefly, and reports were given by standing committee chairmen and presidents of county auxiliaries from: Blue Earth, Hennepin, Mower, Ramsey, Renville, Southwestern, Stearns-Benton, and Upper Mississippi.

NEWS NOTES FROM WASHINGTON COUNTY
Mrs. R. E. Carlson

Mrs. Ray Johnson, wife of Dr. Johnson of the state prison staff, died late this summer.

Mrs. E. Sydney Boleyn has been in the hospital since October 4 when she was struck by an automobile.

Mrs. Carrie Landeen has been confined to her bed for a month.

ST. LOUIS COUNTY NETS $306 FOR PHILANTHROPY
Mrs. P. S. Rudi

The annual rummage sale held by the St. Louis County Auxiliary boosted the group's philanthropic fund by $306. Budget expenses will be met also by the proceeds of the project.

Auxiliary members were dinner guests of the St. Louis County Medical Society, December 8. Dr. Vernon Smith of St. Paul was guest speaker and showed his wild game and skiing pictures. Dr. P. S. Rudie, retiring president, paid tribute to the Auxiliary and to the pioneer members of the Medical Society responsible for its growth and progress.

STEARNS-BENTON GROUP AIDS CANCER CLINIC
Mrs. R. C. Smith

Most recent project of the Stearns-Benton Auxiliary was assisting with the Cancer Clinic, held in St. Cloud December 4. Concurrently, the members are laying plans for: supplementing the loan fund for the nurses at the St. Cloud hospital, and arranging the program for the St. Cloud Health Day and many other activities.

WINONA WOMEN SEW FOR HOSPITAL THERE
Mrs. P. A. Mattison

Sewing for the Winona General Hospital is keeping the Auxiliary busy at its twice-monthly meetings. In addition to the sewing sessions, the Auxiliary held two other meetings recently, one devoted to Workshop reports and the other to discussions of medical legislations, led by Mrs. Elmer Rusten.

POSSIBILITIES UNLIMITED FOR HEALTH DAYS
Mrs. Hobart Johnson

Southwestern Auxiliary, comprising six counties, pioneered this year in the field of community Health Days, held in co-operation with the local medical society and the Minnesota Department of Health. The success



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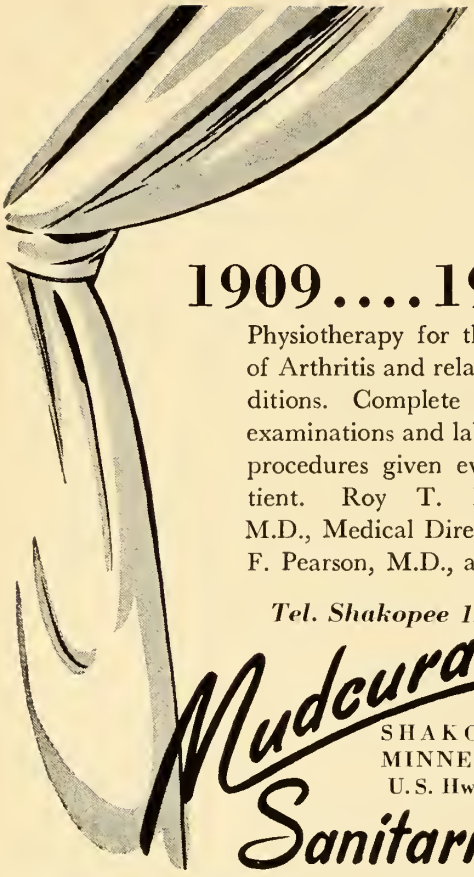
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of this meeting led to the decision of the Minnesota State Medical Association and the Auxiliary to sponsor such Health Days in various parts of the state.

As public relations chairman, it has been my pleasure to attend subsequent Health Days and to note the part we play as an organization. The success of the meetings is somewhat in proportion to the amount of work that the wives of physicians have been willing to do, both in planning and publicizing.

In evaluating these Health Days as a continued project in our state and as a recommendation for other states, it is evident that the good results far outweigh the difficulties encountered. Speakers of high calibre can be approached, because they are assured of a representative audience. Many leaders will be present who will not only profit by the discussions but by personal contacts they make at such a time. Many new friendships are formed among the wives of physicians as they meet and work together for the good of the community.

Factors to be considered are:

Preliminary Plans.—Choice of date (fear of polio is prevalent in the early fall), counties to be included, subjects to be presented and by whom, publicity by the press and radio, letter and in person, with special emphasis that the general public is invited, chairman and committees, with special stress on co-operation of Auxiliary members.

Health Day Details.—Registration (desk must be located so that noise does not interfere with sessions), hospitality, handling of the crowd, provision for good loudspeaker system, timing of panels and speakers to sustain audience interest.

The November issue of MINNESOTA MEDICINE carried the Minnesota Department of Health endorsement of Health Days and the medical societies and auxiliaries owe the department personnel a debt of deep gratitude. It was also gratifying to see how many doctors attended the meetings and took part in the programs.

Auxiliary members can be proud of the accomplishments of this year and yet realize that the possibilities for good in this line of endeavor are unlimited. In the beginning, those with vision must work hard to lead the way, but year by year the links in our chain will grow stronger and because of our efforts the citizens of Minnesota will learn that the medical profession stands united to help show them the way to happier and healthier living.

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Of General Interest

Dr. Edward Q. Ertel, Ellendale, was in Chicago during the middle of November attending a surgical convention.

* * *

Dr. Leslie Caplan has opened offices at 340 LaSalle Building, Minneapolis, for the practice of psychiatry.

* * *

During the middle of November Dr. Douglas L. Jacobs of Willmar attended a medical convention in Cleveland, Ohio.

* * *

Dr. Charles W. Rogers of the Winona Clinic attended a continuation course in pediatrics at the University of Minnesota early in December.

* * *

Dr. Norman Johnson, Minneapolis, announces the reopening of an office at 65 South Tenth Street for the practice of internal medicine.

* * *

Dr. and Mrs. W. F. Mercil, Crookston, were in Minneapolis during the middle of November while Dr. Mercil attended a medical meeting.

* * *

A semi-annual chest clinic was held in Owatonna on November 30 by Dr. Karl H. Pfuetze, director of the Mineral Springs Sanatorium at Cannon Falls.

* * *

Among those attending a meeting of the Scott-Carver County Medical Society in New Prague on November 24 was Dr. H. M. Juergens of Belle Plaine.

* * *

Among Minnesota men attending the interim session of the American Medical Association in St. Louis, Missouri, early in December was Dr. J. C. Jacobs of Willmar.

* * *

One of the speakers at the annual meeting of the Minnesota Association of Coroners in St. Cloud December 10 and 11 was Dr. James Cardy of the University of Minnesota pathology department.

* * *

"The Concept of a Healing Force in Medical Psychology" was discussed by Dr. Maurice N. Walsh, Rochester, at a meeting of the Minnesota Society of Neurology and Psychiatry in Saint Paul on November 9.

* * *

Principal speaker at a meeting of the Rotary Club in Hibbing on November 11, Dr. T. A. Estrem described changes in the practice of medicine in the past thirty years.

* * *

In November, Dr. N. N. Ninneman purchased a home in Waconia only two doors from his office quarters. It was announced that he planned to use the building both as office and as residence.

* * *

Dr. H. P. Rome, Rochester, has been appointed chairman of the training committee in psychiatry of the United States Public Health Advisory Board. The committee allots funds for the undergraduate and graduate training of psychiatrists throughout the United States.

* * *

Dr. Ralph E. Creighton, Minneapolis, was appointed on November 22 to the board of directors of the Minneapolis Community Chest and Council. Dr. Creighton is a past president of the Hennepin County Medical Society.

* * *

Dr. Waltman Walters, Rochester, was elected president-elect for 1949-1950 of the Interstate Postgraduate Medical Association of North America at a meeting of the group in Cleveland, Ohio, November 9 through 11.

* * *

The disadvantages of socialization of medicine were discussed by Dr. Martin O. Wallace, Duluth, when he spoke at a meeting of the Duluth Kiwanis Club on November 10.

* * *

Dr. Clyde A. Undine of Minneapolis attended the Midwest regional meeting of the American College of Physicians held in Detroit, Michigan, November 20, 1948.

* * *

Among Minnesota physicians attending a two-day continuation course in obstetrics and gynecology at the University of Minnesota November 15 and 16 was Dr. M. I. Howard of Mankato.

* * *

During the middle of November, Dr. and Mrs. L. W. Johnsrud of Hibbing were week end guests of former Hibbing residents, Dr. and Mrs. Randall Derifield, now living in Des Moines, Iowa.

* * *

Among those in attendance at a meeting of the Minnesota Surgical Society in Saint Paul on November 5 was Dr. Albert Fritsche of New Ulm. The society meeting was held at Ancker Hospital.

* * *

"Psychiatric Problems of Adolescence" was the topic discussed by Dr. Edward Anderson, Minneapolis, when he spoke at a meeting of the Blue Earth Valley Medical Society in Winnebago on October 21.

* * *

Principal speaker at the Armistice Day assembly of the Rochester senior high school was Dr. Maurice N. Walsh, of the Mayo Clinic, who spoke to students on the theme, "Safeguarding Our America."

* * *

In Crookston, Dr. C. G. Uhley spoke on cancer at a meeting of the Parent-Teacher Association of Washington School on November 15. Dr. Uhley is a director of the Minnesota Division of the American Cancer Society.

* * *

Dr. Robert M. Drake, son of Dr. Charles R. Drake of Minneapolis, is taking a fellowship in pediatrics at the Mayo Foundation. Dr. Drake was married to Miss Merry H. Ekblad last April.

Dr. Jack T. Murphy has become associated with Dr. Joseph M. Ryan in the practice of internal medicine with offices at 524 Lowry Medical Arts Building, Saint Paul. It was erroneously reported in the December issue that his association was with Dr. Joseph M. Riga.

* * *

"New Drugs and New Concepts in Medicine" was the title of a talk given by Dr. Harold G. Benjamin, Minneapolis, at a luncheon meeting of the Minneapolis Professional Men's Club early in December. He cautioned his audience that "each new drug has its limitations."

* * *

Dr. Philip F. Eckman, Duluth, was renamed chairman of the Duluth Chamber of Commerce public health committee, it was announced on November 17. The committee, composed of both physicians and laymen, deals with health problems from a community standpoint.

* * *

It was announced in November that Dr. J. W. Helland, Spring Grove, had been re-elected representative director of the Minnesota Public Health Association. Dr. Helland is president of the Houston County Public Health Association.

* * *

Included in the sixty Northwest physicians who attended a three-day continuation course in gastroenterology at the University of Minnesota in late October were Dr. Roy T. Pearson, Shakopee, and Dr. Harry Shragg, Elmore.

* * *

Dr. and Mrs. Carl W. Waldron, Dr. and Mrs. C. I. Karlecn, and Dr. and Mrs. S. G. Balkin, all of Minneapolis, were visitors in November at the Greenbrier, White Sulphur Springs, West Virginia, where the three physicians attended a meeting of plastic surgeons.

* * *

In an address before the Lions Club of Rochester on December 2, Dr. M. M. Hargraves discussed "The Real Objectives of the Izaak Walton League." The talk was given one week before Dr. Hargraves was to retire as president of the Minnesota league upon expiration of his term of office.

* * *

Three European medical groups honored Dr. Henry W. Meyerding, Rochester, during his recent stay in Europe. Dr. Meyerding was made an honorary member of the Netherlands Orthopaedic Association, the Czechoslovak Society of Orthopaedic Surgery and Traumatology, and the French Surgical Society.

* * *

It was announced on November 24 that Dr. Austin McCarthy, formerly of Minneapolis, had become associated with the Willmar Clinic. A graduate of the University of Minnesota Medical School, Dr. McCarthy interned at Minneapolis General Hospital and spent several years there as a resident in surgery.

* * *

Dr. Otto C. Phares, formerly of Minneapolis, has opened offices in St. Cloud at 701½ St. Germain Street. He is limiting his practice to urology. Dr. Phares recently completed a three-year fellowship in urology at Minneapolis General Hospital. He is a graduate of the University of Minnesota Medical School.

* * *

On November 18 the Davis Clinic of Wadena announced the addition of Dr. Thomas D. Moberg, formerly of Minneapolis, to its staff. A graduate of the University of Minnesota Medical School, Dr. Moberg served his internship at Waterbury Hospital, Waterbury, Connecticut.

* * *

Dr. F. N. Grose was named Clarissa's "man of the year" at the annual dinner held on November 11 by the Clarissa Commercial Club. Each year the award is given to the citizen who, in the opinion of the club, has contributed most to community development and progress. Dr. Grose has practiced in Clarissa for twenty years.

* * *

It was announced on November 17 that Dr. Charles E. Stafford planned to leave Baudette within thirty days to become head of the medical department of the veterans hospital at America Lake, near Tacoma, Washington. Dr. Stafford had practiced medicine in Baudette for several years.

* * *

Two Rochester physicians were guest speakers at a meeting of the Minnesota State Dietetic Association in Winona on November 6. Dr. Howard M. Odel discussed "The Dietary Management of Cardio-renal Disease," and Dr. John M. Berkman spoke on "Anorexia Nervosa."

* * *

Dr. A. B. Baker, professor and director of the division of neurology at the University of Minnesota Medical School, spoke on "Progress in Treatment of Infantile Paralysis" at an open forum meeting of the Duluth Chamber of Commerce on November 16. Dr. Baker illustrated his talk with photographic slides.

* * *

Dr. Edward W. Sickels has opened an office at 625 Lowry Medical Arts Building, St. Paul, for the practice of general surgery. Dr. Sickels graduated from the University of Minnesota Medical School in 1940, interned at the Harper Hospital, Detroit, Michigan, for two years, served in the Navy for four years and has been surgical resident at the Miller Hospital, St. Paul, the past two years.



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Physicians visiting Chicago may write in advance or call personally at the headquarters of the Chicago Medical Society, 30 North Michigan Avenue, for a copy of "This Week in Chicago Medicine," which lists the weekly clinics and medical meetings in the Cook County hospitals, medical schools and medical organizations.

* * *

A Swiss chemist, Paul Muller, has been awarded the 1948 Nobel Prize for discovering the insect-killing qualities of DDT. Searching for a drug to protect plants against insects, he discovered the properties of dichlorodiphenyl-trichoroethane which resulted in the saving of thousands of lives from insect-borne diseases during World War II.

* * *

A former fellow with the Mayo Foundation, Dr. Raymond B. Allen, now president of the University of Washington, was the commencement speaker at the fall quarter exercises December 16 at the University of Minnesota. Dr. Allen, who holds among other degrees one of doctor of medicine from the University of Minnesota Medical School, left Minnesota in 1934.

* * *

Dr. Henry F. Helmholz, Rochester pediatrician, reported in December to the International Children's Emergency Fund in New York that undernourishment was increasing among millions of European children in spite of efforts of the fund. He listed as reasons a milk shortage, crop failures and an increased child population in twelve countries receiving aid.

* * *

A former Mayo Clinic staff member, Dr. Edward D. DeLamater has been appointed associate research professor in the department of dermatology and syphilology at the University of Pennsylvania. Dr. DeLamater was formerly a consultant in mycology at the Mayo Clinic and an assistant professor of bacteriology in the Mayo Foundation.

* * *

In Osakis, Dr. Edwin E. Emerson moved into offices in his newly constructed clinic building in November. The one-story building, built of brick and glass blocks, houses a waiting room, laboratory, x-ray room, receptionist's office, emergency room and two examination rooms. Dr. Emerson has practiced in Osakis for two years.

Thirty-six persons—physicians, their wives, and employes—attended a banquet in Crookston on November 10 to observe the twenty-second anniversary of the Northwestern Clinic. A feature of the evening program was the showing of motion pictures taken by Dr. M. O. Oppegaard in California, Mexico, Central America and New York.

* * *

Dr. Victor Johnson, director of the Mayo Foundation, has been appointed to a six-man national committee to undertake a three-year study of medical education in the United States. The study, the third and largest undertaken in American medical history, is sponsored by the American Medical Association and the Association of American Medical Colleges.

* * *

An award from the Mead Johnson Company for outstanding contributions to pediatrics was given to Dr. B. M. Spock, Rochester, at a meeting of the American Academy of Pediatrics in Atlantic City in November. The award was one of two offered each year by the firm for exceptional work in pediatrics and was presented to Dr. Spock by a committee from the academy.

* * *

Six of the Minnesota physicians who attended a continuation course on the diagnosis and treatment of cancer, held at the University of Minnesota December 2, 3 and 4, were Dr. I. L. Oliver, Graceville; Dr. Douglas L. Johnson, Little Falls; Dr. A. D. Rydland and Dr. J. F. Norman, both of Crookston; Dr. Eli E. Christensen, Winona, and Dr. C. A. Saffert, New Ulm.

* * *

At the annual meeting of the staff of the Mayo Clinic on November 15, Dr. J. F. Weir was elected president of the staff, and three members who had reached the retirement age were honored. Placed on emeritus status were Dr. M. S. Henderson, Dr. W. A. Plummer and Dr. Charles Sheard. Dr. Henderson joined the clinic in 1907, Dr. Plummer in 1910, and Dr. Sheard in 1924. Other officers elected at the meeting included Dr. Della G. Drips, vice president, and Dr. E. N. Cook, secretary.

* * *

The board of directors of the Community Health Center and Clinic in Two Harbors announced during the middle of November that Dr. Joseph Bloom, formerly of New York, had arrived to join the clinic staff. A

graduate of the New York Medical College, Dr. Bloom has served as chief resident surgeon at the Flower and Fifth Avenue Hospitals. During the recent war he served for thirty-seven months with the army medical corps.

* * *

Representing the physicians of Granite Falls, Dr. Carl L. Lundell is a member of a newly organized school health council, which was formed to aid in co-ordinating various aspects of the school health program in Granite Falls. One of the first proposals made by the council was a physical examination for all seventh grade students. Other recommendations made by the council included expansion of the dental health program and instruction of pupils in good health practices.

* * *

Dr. Paul C. Bucy, professor of neurology and neurological surgery at the Illinois Neuropsychiatric institute, will deliver a lecture at the University of Minnesota January 27 at 8 p.m. He will speak in the auditorium of the Minnesota Museum of Natural History.

Dr. Bucy's topic will be "The Cerebral Control of Muscular Activity." The lecture is sponsored by the J. B. Johnston lecture in neurology and is open to all medical men.

* * *

The American Legion, at its convention held in Miami in October, 1948, went on record as opposed to compulsory national health insurance and passed a resolution to that effect. The resolution stresses the lowering of standards of health care, the enormous increase in taxes and the necessary increase in federal employes which such a step would entail. A copy of the resolution was mailed to 1,000 of the top leaders of the American Legion urging support of the local branches of the National Physicians Committee.

* * *

Until 1945 research in heart disease had little financial support. In 1945 the life insurance companies of the United States and Canada established the Life Insurance Medical Research Fund to which they have contributed $600,000 a year. This fund is financing more than fifty research organizations for the study of the cause of heart disease. During 1948 this fund began to be supplemented by funds from the American Heart Association and the U. S. Public Health Service, and it is estimated that in the future some $2,000,000 will be available for heart research alone.

* * *

Druggists have shown some concern over the threatened socialization of medicine, and two local Minneapolis drug stores have contributed to the National Physicians Committee. A recent issue of *Drug Topics* calls attention to marked increase in prescription trade and a corresponding lessening in the sale of proprietary remedies in England since medicine was socialized in that country in July. There has been some complaint on the part of English druggists over the increased work this entails and the delay in their receiving government checks.

* * *

Speaking at a meeting of the Minneapolis Community Chest and Council's health and medical care division in December, Dr. Charles E. A. Winslow, professor emeritus in public health at Yale University, said that a proposal supported by President Truman for federal health insurance was a "moderate middle-of-the-road course." Dr. Winslow, who is editor of the *American Journal of Public Health*, said he "cannot see the practical possibility of jumping in all at once" as is urged by some "extremists."

* * *

The St. Louis County board, at a meeting early in December, approved a new medical fee schedule for physicians caring for county patients. The new schedule, representing a 45 per cent increase over previous fees, was to go into effect January I. In commenting on the schedule, Dr. Mario Fischer, acting county health officer, said that the new fees were 43 per cent below fees for similar services charged by the Veterans Administration and also were slightly less than those granted under the Blue Shield program.

* * *

Six Duluth physicians discussed various phases of industrial medicine on December 1 at the opening of the twenty-fifth annual industrial safety school sponsored by the Duluth Chamber of Commerce. The following physicians appeared at sectional discussion meetings: Dr. W. N. Graves, who spoke on "Burns"; Dr. E. W. Minty, "Hand Infections"; Dr. J. C. O'Neill, "Eye Safety"; Dr. G. C. Doyle, "Industrial Dermatoses"; Dr. W. A. Klein, "Sprains and Strains"; and Dr. Henry Fisketti, "Hand Injuries."

* * *

After thirty-seven years of general practice in Freeborn, Dr. Carl R. Buturf moved to Minneapolis in November where he plans to "take it easy." A year ago Dr. Buturf decided to give up his country practice; he then spent twelve months trying to achieve his goal. He stayed in Freeborn for the extra year trying to help the residents interest another physician in taking over the practice, without success. Finally he closed his office.

In Minneapolis, Dr. Buturf has no intention of living a life of retirement. On the contrary, he plans to spend his time attending dermatology clinics at the University of Minnesota and at Twin Cities hospitals. After thirty-seven years of general practice, he might become a specialist!



It was announced in November that three new physicians had been added to the staff of the Lenont Peterson Clinic in Virginia. They are Dr. Merle Sharp, a graduate of the University of Louisville Medical School, with three years of training in obstetrics and gynecology at the University of Pennsylvania Hospitals; Dr. Robert Kurth, a graduate of Creighton University Medical School, who was in private practice in Iowa for eighteen months; and Dr. Nels Stransjord, a graduate of the University of Chicago School of Medicine, who has taken postgraduate work at the University of California. In the Virginia clinic Dr. Sharp is head of the department of obstetrics and gynecology, and Dr. Kurth is associated with him. Dr. Stransjord is associated with Dr. E. N. Peterson in surgery and industrial medicine. The staff of the Lenont Peterson Clinic now numbers eight physicians.

* * *

Members of the United States Chapter of the International College of Surgeons, meeting in St. Louis, Missouri, November 15 to 19, named Dr. Henry W. Meyerding, Rochester, president-elect of the group, to take office in 1950.

Minnesota physicians were represented on the program by Dr. Winchell McK. Craig and Dr. Claude F. Dixon, Rochester, who were among the sixty-four surgeons who presented papers at the meeting.

Dr. Walter C. Stillwell of Mankato was awarded a fellowship in the College, and Dr. Allen G. Janecky, Warroad, became a matriculate of the group.

Among Minnesota physicians attending the meeting were Dr. M. O. Oppegaard, Crookston; Dr. O. J. Hagen, Moorhead; Dr. M. J. McKenna, Grand Rapids, and Dr. Howard Vogel, New Ulm.

* * *

Dr. S. A. Slater of Worthington, medical director of Southwestern Minnesota Sanatorium, was honored with a certificate of achievement awarded by the Minnesota Public Health Association for "outstanding" contributions in tuberculosis control" at a dinner meeting at Christmas Seal headquarters October 18, 1948. The award was made in recognition of Dr. Slater's pioneer work in Mantoux testing for measuring the effectiveness of tuberculosis control which led to national acceptance. The fact that seven of the ten counties of Southwestern Minnesota have been accredited for outstanding records in tuberculosis control is credited in large part to Dr. Slater's efforts. He is a past president of the Minnesota Public Health Association and of the Mississippi Valley Conference on Tuberculosis and has been representative director of the National Tuberculosis Association since 1930.

* * *

Dr. and Mrs. Henry W. Meyerding of Rochester returned in November from an extended visit to Europe. During their stay, Dr. Meyerding, as president of the organization, attended the Fourth Congress of the International Society of Orthopaedic Surgery and Traumatology, in Amsterdam last summer. He also gave the opening address at the Czechoslovak Society of Orthopaedic Surgery and Traumatology in Prague on September 23, and was made an honorary member of the society. The Netherlands Orthopaedic Association and the French Surgical Society also made him an honorary member. While in Paris, he attended the Congress of the French Surgical Society and the French Orthopaedic Society. Dr. Meyerding has been named president-elect of the United States Chapter of the International College of Surgeons and will take office for two years beginning in 1950.

* * *

The annual Detroit Orthopaedic Lecture, under the auspices of the Wayne County Medical Society, was delivered on December 6 by Dr. Vernon L. Hart of Minneapolis. Dr. Hart presented a copy on "Congenital Dislocation of the Hip: Recognition and Treatment during Infancy before Weight Bearing." He also showed a colored motion picture on the same subject.

University of Minnesota physicians contributed a major portion of the program at a gastric cancer conference sponsored by the National Cancer Institute in San Francisco December 13 and 14.

Minnesota speakers at the meeting included Dr. Leo G. Rigler, professor and chief of radiology and physical therapy; Dr. David State, assistant professor of surgery and director of the University's Cancer Detection Center; Dr. Charles F. Code, professor of physiology at the Mayo Foundation; Dr. Robert Hebbel, associate professor of pathology; Dr. Stanley R. Friesen, instructor in surgery, and Dr. George E. Moore, clinical instructor in surgery and a fellow of the National Institute of Public Health.

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Surgical Anatomy and Clinical Surgery, two weeks, starting February 21, March 21.
Surgery of Colon and Rectum, one week, starting March 7, April 11.
Surgical Pathology every two weeks.

GYNECOLOGY—Intensive Course, two weeks, starting February 21, March 21.
Vaginal Approach to Pelvic Surgery, one week, starting February 14.

OBSTETRICS—Intensive Course, two weeks, starting March 7.

MEDICINE—Intensive Course, two weeks, starting April 4.
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Comments by a British subject in regard to Great Britain's expanded health service were recently forwarded to MINNESOTA MEDICINE by Dr. N. O. Pearce, acting director of the division of cancer control, Minnesota Department of Health. Excerpts from a letter, which Dr. Pearce received from England in December, follow:

"I noticed a suggestion that there is being prepared for you a health and insurance scheme to cover you from cradle to coffin. If it is offered to you, I have a feeling you will find the idea very indigestible.

"We have now had five months of the enlarged health service, and as regards the professions, the situation seems to be like this:

"Demand for hospital accommodation has increased tremendously.

"The doctors, in what is normally a healthy period, have been swamped with work, and, in great numbers of cases, are finding severe cuts in their earnings as well as some difficulty in gathering their pay.

"Private practice has almost faded out; this was hardly expected. Dentists and opticians have long waiting lists; already vast numbers of dentures and spectacles have been supplied without cost (except, of course, that women up to sixty and men up to sixty-five have to maintain their weekly contribution). The earnings of the dentists and opticians have been beyond their dreams. We pharmacists have seen dispensing doubled, probably much more than doubled, but remuneration for this is very much more modest, and many are feeling acute difficulty in the heavy outlay in drugs and expensive 'specials' and the long delay between the costing and payment of same. The thought of any sort of epidemic frightens us."

* * *

The Minneapolis War Memorial Blood Bank at 1914 LaSalle Avenue (the former home of Charles B. Rogers) was dedicated on Armistice Day, November 11, 1948, at which time the remodeled building and equipment were open for public inspection.

The original cost of the bank was raised by the Junior Chamber of Commerce of Minneapolis through subscriptions. The director is Dr. Rudolph Koucky, and the Board of Directors is composed of a third doctors, a third hospital administrators and a third civic minded citizens.

For obtaining blood donations, donor clubs have been organized in various industrial plants, church clubs and the like, a fifth of the members of each group agreeing to make a donation of blood each year which entitles the donor and his family free blood in case of need.

The Minneapolis Blood Bank supplies the hospitals and surrounding territory at a nominal charge of $6.00 per unit to cover laboratory work.

The St. Paul Regional Blood Center, operated by the American Red Cross, began operation December 15, 1948, at 91 East Kellogg Boulevard. Dr. E. V. Goltz is in charge.

The St. Paul Center will supply hospitals in Ramsey, Washington, Dakota, Chisago, Isanti, Freeborn, Mower, Winona, Steele, Rice, Blue Earth and Goodhue Counties in Minnesota and Polk, St. Croix, Pierce, Dunn, Chippewa, Eau Claire, Pepin and Barron Counties in Wisconsin.

The generosity of the public in the territory supplied will be relied upon for donors, mobile units to be used for collecting donations from the surrounding territory.

* * *

HOSPITAL NEWS

The physicians' lounge in the Montevideo Hospital, after being in use since 1900, is to be replaced with a new one, it was announced in late November. A check for $1,000 has been presented to the hospital for that purpose by Mrs. L. R. Lima, widow of the late Dr. L. R. Lima of Montevideo.

* * *

In November, Dr. C. A. Traeger, chief of the medical staff of St. Lucas Deaconess Hospital in Faribault, announced that five physicians had been elevated from associate to active staff membership. The five physicians are Dr. D. W. Francis, Morristown; Dr. F. J. Lexa, Lonsdale; Dr. F. C. Meyer, Kenyon; Dr. R. R. Moses, Kenyon, and Dr. C. A. Rohrer, Waterville.

* * *

The Willmar State Hospital provided conducted tours for the public during the first week of December as part of the observation of Mental Health Week. The tours were arranged to give the public a better idea of the problems and procedures in a mental hospital and to show how the use of restraints could be reduced if sufficient hospital personnel were available. At the time of the tours an experimental anti-restraint program had been started at the hospital, but due to lack of personnel the



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non-restraint techniques could be used in only three of the hospital's cottages. Where the experimental techniques were used, however, it was found that the number of restraints could be greatly reduced. The program was under the direction of Dr. Stanley B. Lindley, hospital superintendent.

* * *

Contracts totaling $849,554 for the construction of the Variety Club Heart Hospital at the University of Minnesota were awarded December 17, 1948, to three Twin Cities contractors, and work on the project started shortly after Christmas.

Bids for the new eighty-bed hospital to be erected on the Mississippi River bank adjacent to University Hospitals were opened November 24, and held open pending action on a University application for $325,334 of federal funds under the Hill-Burton Hospital construction act.

Upon notification from the United States Public Health Service of approval of a grant of $310,271 for construction of the hospital building and an additional grant of $15,063 for the purchase of equipment, University officials awarded contracts to the low bidders.

Successful bidder for the general contract is the firm of Naugle-Leck, Inc., of Minneapolis with a net figure of $573, 575. The plumbing, heating and ventilating work was awarded to Reuben L. Anderson, Inc., St. Paul, on a bid of $214,920, while the Batzli Electric Company of Minneapolis took the electrical contract with a low bid of $61,059. The contracts call for completion of the project within a period of 548 days.

Completed, the new hospital, with equipment, is expected to cost $987,285. Funds which will pay the structure will come from the following sources: Variety Club of the Northwest, $464,000 ($304,000 of which has been raised and an additional $160,000 pledged); grant of federal funds under the Hill-Burton Act, $325,334; University funds now on hand from several sources, $97,951; and a bank loan of $100,000 to be repaid over a ten-year period.

* * *

Despite spiraling costs of operations and a severe shortage of staff, University of Minnesota Hospitals cared for more patients during the year ending last June 30 than in any previous year, according to the annual report of Ray M. Amberg, hospitals director.

During the year, 9,752 patients were admitted to the hospitals for treatment as compared with 9,532 admitted during the previous year and 9,220 during 1945-46. The hospitalization period averaged 14.1 days, while the average for the year before was 15.2 days and for 1945-46, 15.4 days.

Surgical operations performed in University Hospitals totaled 7,603, an increase of 865 over the previous twelve months and 1,908 over the year 1945-46.

Visits to the hospitals' out-patient department during the period totaled 90,566. Compared with the 80,611 visits recorded in 1946-47 and the 74,110 calls made by patients during 1945-46 for diagnosis and treatment, this figure illustrates the increasingly heavy load being borne by this division of University Hospitals.



Startling increases in the costs of operating the hospitals were disclosed by Amberg in his annual report. In-patient department costs soared from $9.49 per patient per day in 1945-46 to $12.02 in 1946-47 and to $16.31 in 1947-48, a boost of $6.82 in two years—$4.29 in the last year alone. The cost per patient visit in the out-patient department averaged $3.72 during the last year or 58 cents above the $3.14 cost during 1946-47 and 87 cents over the 1945-46 visit cost of $2.85.—University of Minnesota News Service, October 8, 1948.

BLUE SHIELD NEWS

Applications received for Blue Shield to November 30, 1948		116,466
Blue Shield cases paid from November 1 to November 30, 1948		886
	Total....1948	3,459
Amount paid on Blue Shield cases from November 1 to November 30, 1948		$ 33,139.38
	Total....1948	$128,814.18

As each supplemental list of licensed and registered doctors of medicine is released by the Minnesota State Board of Medical Examiners, Minnesota Medical Service, Inc. (Blue Shield) receives a copy. The physicians on this list are usually non-participating, unless they have previously contacted the Blue Shield office relative to becoming participating.

The last supplemental list received in the Blue Shield office contained the names of about seventy physicians residing in Minnesota who were not participating in the

Blue Shield plan. In September, 1948, letters and descriptive literature explaining the plan were sent to these physicians, but to date only a very small percentage of them have returned their signed applications. Perhaps many of these gentlemen are not in private practice, or do not reside in Minnesota, or cannot become participating doctors for one reason or another, we do not know. However, it is felt that many of these doctors could and should participate. Undoubtedly, in some cases this Blue Shield material has been misplaced or perhaps slipped the physician's mind and is only called to his attention on the day he renders service to a Blue Shield subscriber.

With the increasing number of persons covered by Blue Shield in Minnesota, more and more physicians are rendering service to Blue Shield patients. For a number of reasons, the newly licensed and registered doctors should give some consideration to becoming Blue Shield participating doctors. In the first place, Blue Shield reduces the collection problem for the doctor, for all allowances on Blue Shield cases are made directly to the physician within ten days after the report form is received in the Blue Shield office. Secondly, according to the Blue Shield subscriber's contract, an allowance of only 75 per cent of the maximum amount allowable would be paid to a non-participating doctor, in which case the Blue Shield subscriber patient is penalized and the doctor can also be hurt in that it is his problem to collect any balance due.

If the doctors in a state can show wholehearted support and co-operation with a prepaid medical care plan, such as Blue Shield, they have a powerful weapon with which to combat government medicine, and will not have to think of the future as one Minnesota doctor recently expressed it in a letter to the Blue Shield, "To have to move to the Fiji Islands and practice for cocoanuts and rum."

May we also express the opinion that other non-participating doctors throughout the state give the above some thought. Any additional information or application cards for enrollment may be obtained from the Blue Shield office.

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ANATOMICAL CHARTS TO BE PUBLISHED IN BOOK FORM

Soon to be issued in book form are the Ciba illustrations of anatomy and pathology which were prepared by Frank H. Netter, M.D. These full color drawings have been distributed to physicians for the last several years in portfolio form by Ciba Pharmaceutical Products, Inc., Summit, N. J.

These anatomical charts have been widely acclaimed in the medical profession. In many medical schools they are used as teaching aids and physicians have found them valuable in office instruction of patients.

While portfolios of new drawings will be issued from time to time, the new book will bring together those that were distributed up to January 1, 1948.

The book will measure 9½ x 12½ inches and contain 224 pages, showing 191 of these anatomical charts printed in full color. It will be sold by Ciba at a price to cover only the actual printing and binding costs.

The subjects covered in the book will be as follows:

Subject	*Number Full-Color Plates*
The Lungs and Chest	36
Injuries to the Chest	12
The Esophagus	12
The Stomach	19
The Duodenum	12
The Small Intestine	20
The Colon	20
Injuries of the Abdomen	10
The Testicle	14
The Prostate	5
The Male Breast	2
The Female Breast	18
The Heart and Aorta	11

The illustrations will be printed on 80-pound gloss enamel paper and the book will be bound in boards with blue buckram covering and the title stamped in genuine gold on the front and spine.

TREATMENT BY DIET, by Clifford J. Barborka, B.S., M.S., M.D., D.Sc., F.A.C.P.; Assistant Professor of Medicine, Northwestern University Medical School, Chicago; Attending Physician, Passavant Memorial Hospital; Consultant in Gastro-enterology and Gastroscopy, Diagnostic Center, Hines Veterans Hospital; Formerly Consulting Physician, The Mayo Clinic. 5th ed. 784 pages. Illus. Philadelphia, London, Montreal; J. B. Lippincott Co., 1948. Price $10.00.

In the mysterious field of the medical uses of diet, Dr. Barborka has written a clear, though somewhat bulky, exposition of the medical uses of food. His book is divided, logically, into a discussion of normal diet and diet in pathological states; then further divided into those pathological states in which diet is of paramount importance, such as diabetes mellitus, Addison's disease, and so on, and those in which diet is of variable importance, such as heart disease and various infections.

Though the author includes many diseases in the last section in which diet is of trivial importance, he does maintain a reasonable sense of the relative importance of diet. His point of view is realistic; he is specific and direct. His discussion of theory is reduced to a minimum. The typical diets and tables are varied and numerous. In summary, Treatment by Diet is of value to anyone, from the dietitian to the general practitioner, who must prescribe diets. JOHN B. MCADAMS, M.D.

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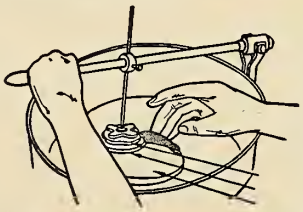
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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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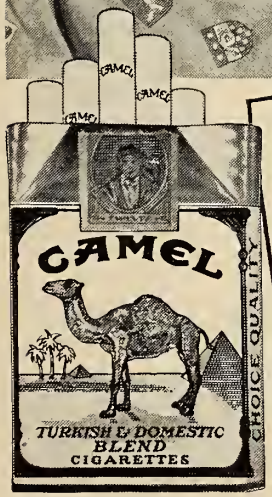

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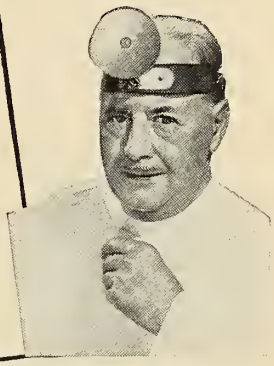
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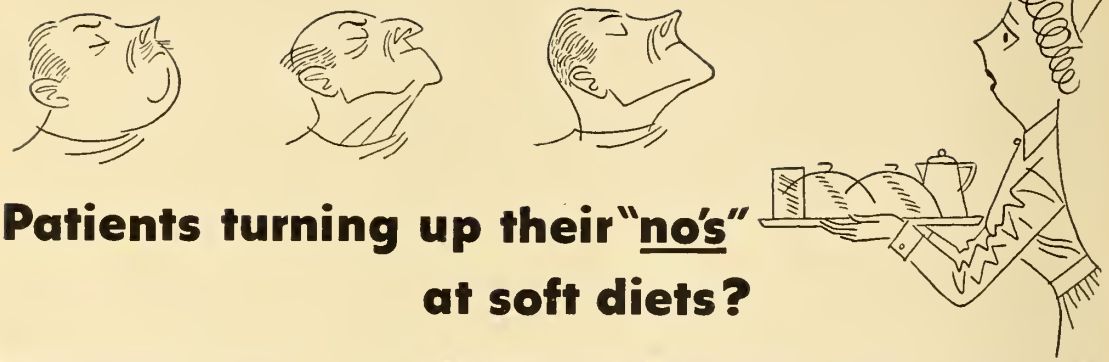
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[1] Boss, E.P.: The Physiologic and Clinical Phenomena of Aging, New Orleans M. & S. J. 97:64 (Aug.) 1944.

[2] Spies, T.D., and Collins, H.S.: Observation on Aging in Nutritionally Deficient Persons, J. Gerontol. *1*:33 (Jan.) 1946.

[3] Stieglitz, E.J.: Therapy of the Aged, M. Ann. District of Columbia *17*:197 (Apr.) 1948.

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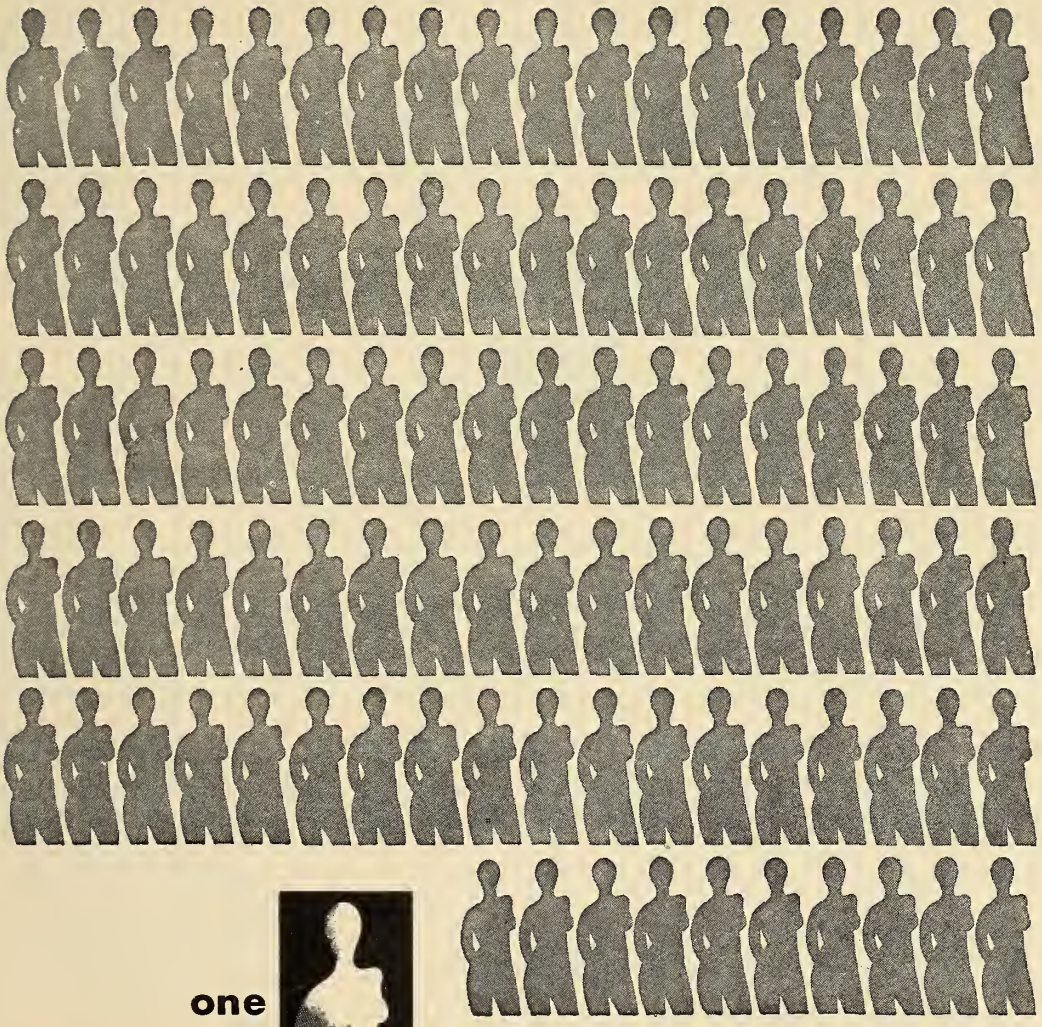


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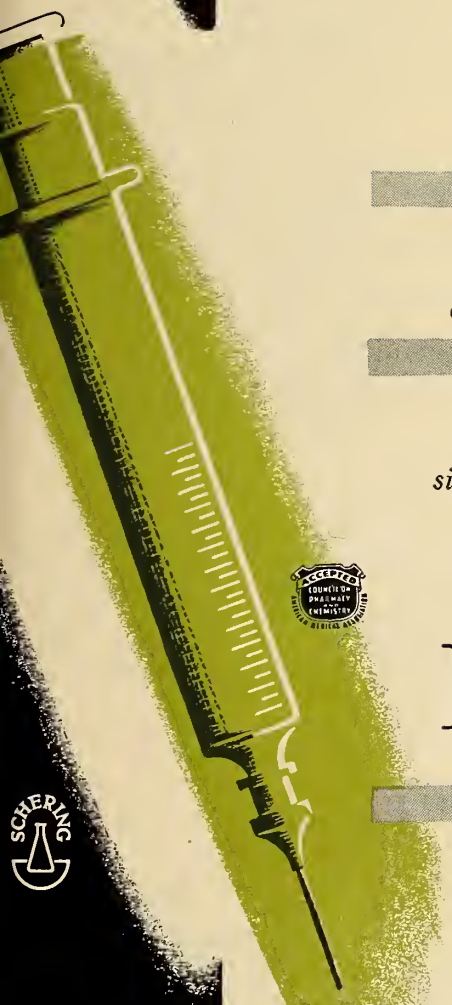
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BIBLIOGRAPHY: 1. Simon S.: J.A.M.A. **138**:127, 1948. 2. Pearman, R. O.: New England J. Med. **228**:507, 1943. 3. Kearns, W. M., Hefke, H., and Morton, S. A.: J. Urol. **56**:392, 1946

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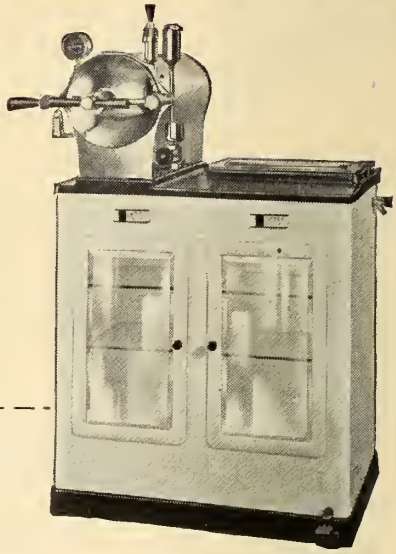
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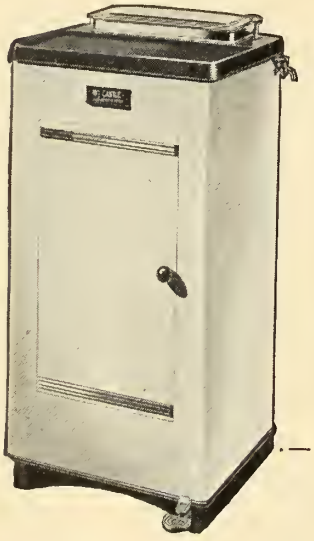
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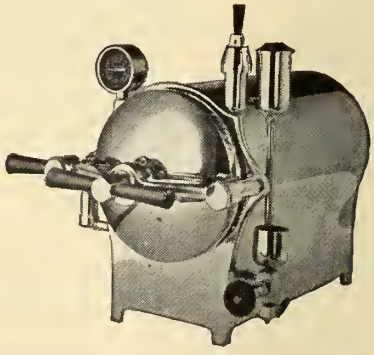


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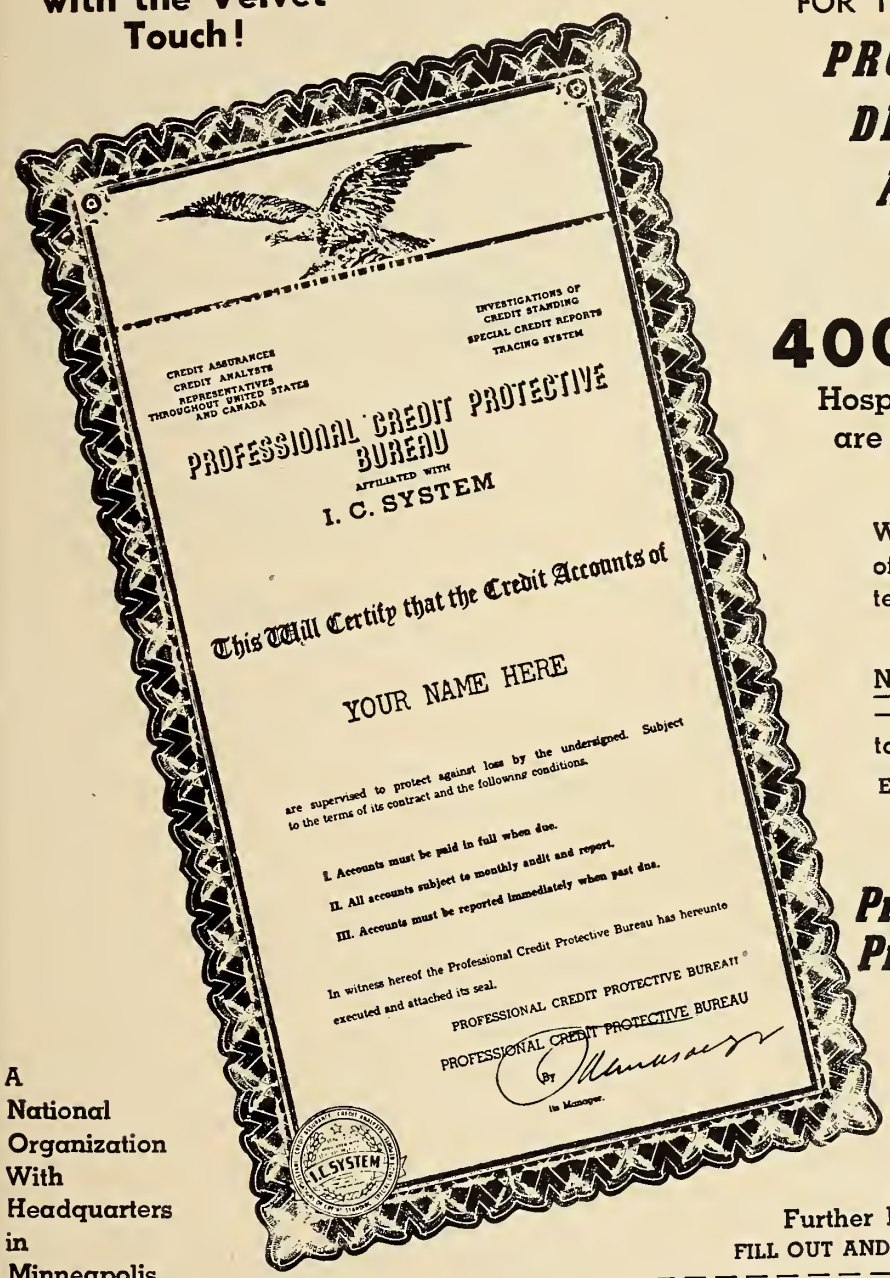
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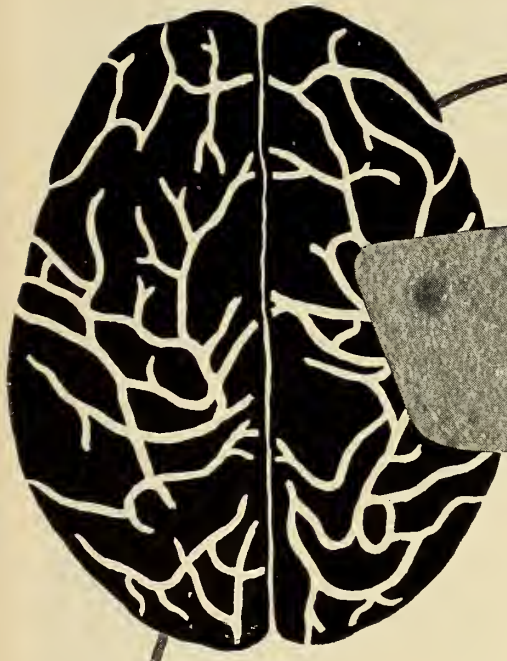
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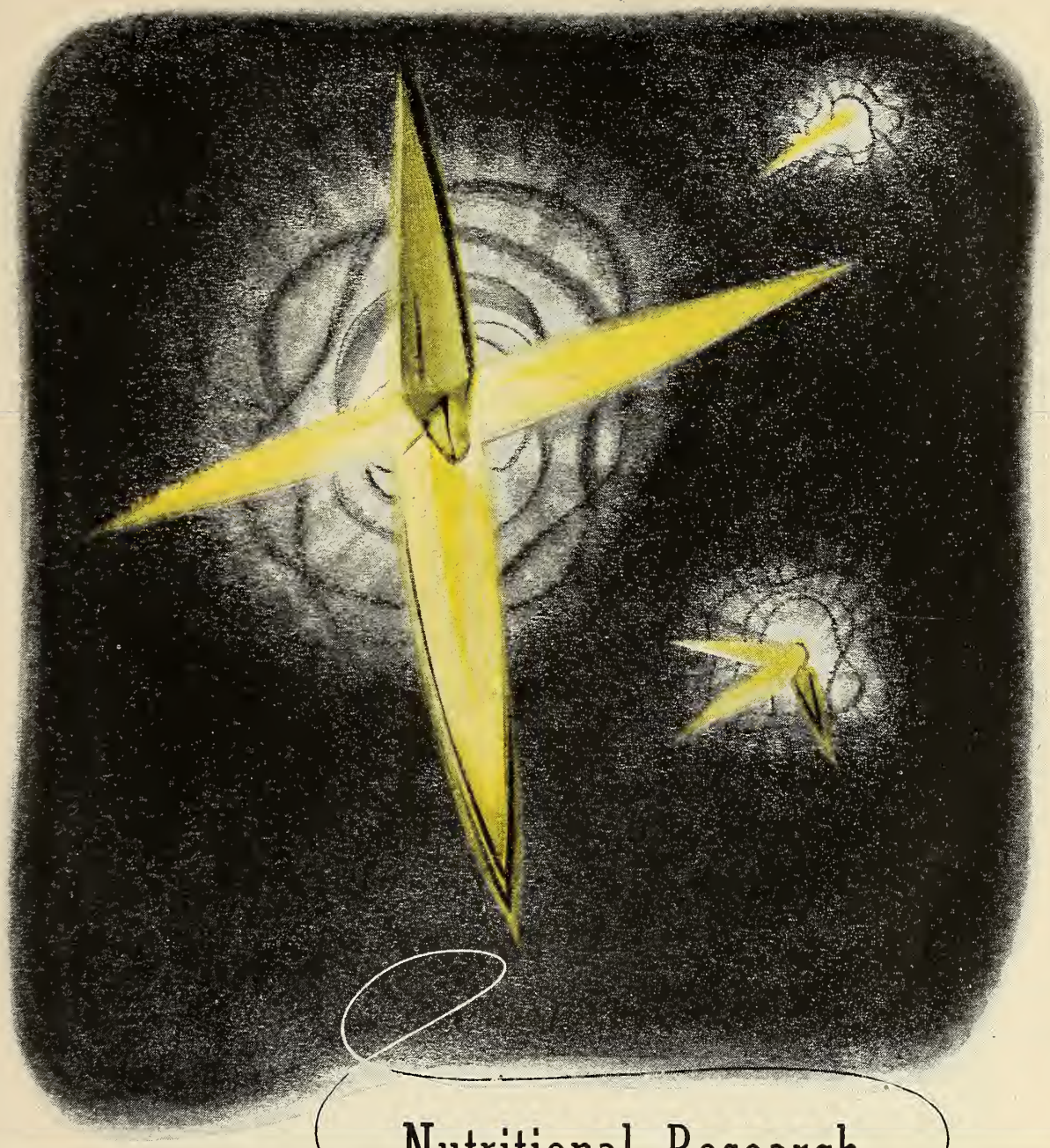
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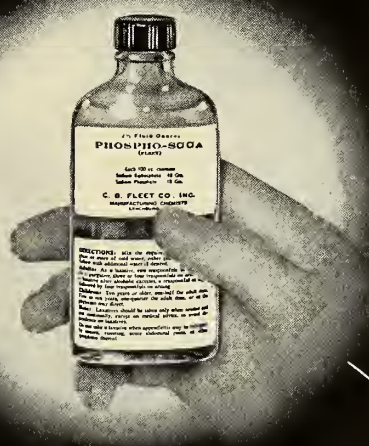
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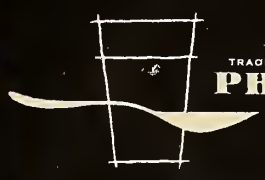


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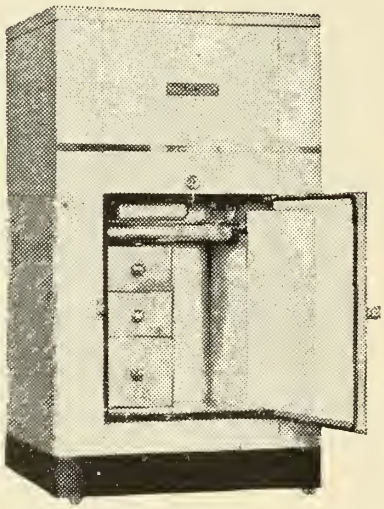


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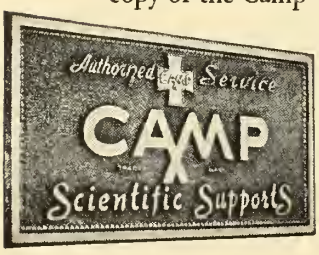
*Snyder, M. L., Kiehn, C. L. and Christopherson, J. W.: Mil. Surgeon, *97*: 380, 1945. • Shipley, E. R. and Dodd, M. C.: Surg., Gynec. & Obst., *84*: 366, 1947 • Mays, J. L.: J. Med. Assoc. Georgia, *36*: 263, 1947. • Curtis, L.: Surg. Clin. N. America, 1466 (Dec.) 1947.



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Minnesota Medicine

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BACKGROUND OF PROBLEM ARISING THROUGH ATTEMPT TO LICENSE FOREIGN MEDICAL GRADUATES

PRIOR to 1937 the Minnesota State Board of Medical Examiners had admitted to its examinations a number of so-called foreign medical graduates. In its attempt to license only those foreign medical graduates whose medical education and moral qualifications were on a par with the graduates of the medical school of the University of Minnesota, it became apparent to the Medical Board that the problem was becoming more difficult of solution for the following reasons:

1. No agency existed for the grading and classification of medical schools outside of the United States and Canada, thus making it practically impossible for the Medical Board to determine whether or not the medical school was one to be approved by the Board.

2. With the approach of war in Europe in 1939, it was no longer possible for the Medical Board to satisfactorily determine the applicant's qualifications as to good moral character. This includes whether or not the applicant was ever convicted of a felony or an offense involving moral turpitude; of whether or not the applicant was addicted or had ever used any habit forming drugs, such as the various derivatives of opium; whether or not the applicant had ever had a previous issued medical license revoked, et cetera.

3. It was also discovered by the Medical Board that a considerable number of American medical students who had failed in their medical course in medical schools in this country, had gone to Europe to continue their medical education, and, in certain instances, had been permitted to enter a European medical school as advanced medical students without any requirement that they take further training in the medical subjects in which they had failed.

4. It was also discovered that it was becoming increasingly difficult, if not impossible, for an American citizen who was a graduate of a medical school such as the University of Minnesota, or any other Class A medical school in this country, to become licensed in any of the European countries without the surrender of his American citizenship.

The Minnesota State Board of Medical Examiners, believing that its first duty is to the public generally, and that the maintenance of high standards in medical education and licensure are a protection to the people of this State, adopted, on November 12, 1937, the following resolution. It was not intended that the resolution was to be a fixed and permanent rule of the Board, but rather that it was subject to amendment if and when the requirements could be relaxed without sacrificing any protection to the people of the State.

RESOLUTION

In Reference to Foreign Medical Graduates

Adopted by Minnesota State Board of Medical Examiners on November 12, 1937.

WHEREAS, following a study made by the Board it appears that facilities are available for the grading of medical schools in the United States of America and in the Dominion of Canada, and it

FURTHER, appearing that no discrimination is made by the various Canadian Provinces against holders of

Article prepared by the Minnesota State Board of Medical Examiners.

Minnesota licenses who are citizens of the United States, and it

FURTHER, appearing that at the present time there are no suitable or practical facilities available to this Board for the grading and classification of medical schools outside of the United States of America and the Dominion of Canada and that citizens of the United States holding Minnesota licenses are not eligible for licensure other than as outlined above, and it appearing that there is no practical way of determining the medical and other qualifications of the so-called foreign applicants, it is found necessary that the following rules and regulations be adopted as to eligibility for examination.

1. A citizen of the United States of America who is a graduate of a Class A Medical School in the United States of America recognized by the Board, is eligible to examination upon furnishing the proof of good moral character, the necessary attendance in school, graduation and degree as required by the laws of this State and the rules and regulations of this Board.

2. A citizen of Canada who is a graduate of a Class A Medical School in the United States of America or the Dominion of Canada, recognized by the Board, is eligible to examination upon furnishing the proof of good moral character, the necessary attendance in school, graduation and degree as required by the laws of this State and the rules and regulations of this Board.

3. All other applicants must

(a) Be citizens of the United States;
(b) Present proof of attendance in a Class A Medical School recognized by the Board, and proof of graduation and degree, as required by the laws of this State and the Rules and Regulations of this Board;
(c) All credentials from foreign schools and institutions must be translated into the English language over the seal and signature of the American Consul in the country wherein such documents were issued;
(d) Present evidence satisfactory to the Board of good moral character;
(e) Present evidence satisfactory to the Board that applicant holds a valid license to practice medicine and surgery in the country where his medical education and degree were obtained.
(f) Present evidence satisfactory to the Board that a medical licentiate of the State of Minnesota is granted reciprocal privileges in the country in which applicant received his medical education, degree and license.
(g) Resolved that all former rules of the Board inconsistent with these resolutions be hereby rescinded.

RESOLVED, that the foregoing be effective from date of November 12, 1937.

* * *

Adopted by the following vote: Ayes—7; Nays—0.

Laws of the State of Minnesota in Reference to the Licensure of Physicians and Surgeons

The laws of the State of Minnesota provide for a state board of medical examiners.

"which shall consist of seven qualified resident physicians appointed by the Governor in the manner hereinafter prescribed."

The law further provides that:

"The board shall have authority to prescribe such rules and regulations relative to the examination of applicants for license to practice medicine, surgery, and obstetrics as may be found necessary."

Sec. 147.01 Minnesota Statutes for 1945.

With respect to the qualifications of the applicant for licensure, the law provides:

"A person not already authorized to practice medicine in the state and desiring so to do shall apply to the secretary of the state board of medical examiners for examination and pay a fee of $20.00 for the use of the board, which in no case shall be refunded. At a time appointed, or at the next regular examination, he shall prove that he is of good moral character, that he has completed four entire sessions of not less than 36 weeks each at a medical school recognized by the board, and received the degree of M.D. or M.B. He shall be examined in surgery, medicine, obstetrics, eye, ear, nose, and throat, and such other branches as the board shall deem advisable. After such examination, the board, if five members thereof consent, shall grant him a license to practice medicine. The examination shall be both scientific and practical and thoroughly test the fitness of the candidate. The board may refuse to grant a license to, or may suspend or revoke the license of, any person guilty of immoral, dishonorable, or unprofessional conduct, but subject to the right of the applicant or licentiate to appeal to the district court in the proper county on the questions of law and fact."

Sec. 147.02 Minnesota Statutes for 1945.

With respect to the licensing of physicians who hold a medical license in another state, or who are diplomates of the National Board of Medical Examiners, the laws of Minnesota provide as follows:

"The state board of medical examiners, either with or without examination, may grant a license to any physician licensed to practice by a similar board of another state or the national board of medical examiners who holds a certificate of registration showing that an examination has been made by the proper board, in which an average grade of not less than 75 per cent was awarded to the holder thereof, the applicant and holder of such certificate having been at the time of the examination the legal possessor of a diploma from a medical college in good standing in this state, which diploma may be accepted in lieu of an examination as evidence of qualification. In case the scope of the examination was less than that prescribed by this state, the applicant may be required to submit to an examination in such subjects as have not been covered. The fee for such examination shall be $75.00.

"A certificate of registration or license issued by the proper board of any state may be accepted as evidence of qualification for registration in this state; provided, the holder thereof was, at the time of such registration, the legal possessor of a diploma issued by a medical college in good standing in this state and that the date thereof was prior to the legal requirements of the examination test in this state."

Sec. 147.03 Minnesota Statutes for 1945.

The laws of the State of Minnesota, also provide that unless like reciprocity is granted a graduate in medicine of the University of Minnesota, and the holder of a Minnesota medical license, that reciprocity shall not be extended by this State; the law reading as follows:

"If by the laws of any state or the rulings or decisions of the appropriate officers or boards thereof, any burden, obligation, requirement, disqualification, or disability is put upon physicians registered in this state or

holding diplomas from medical colleges in this state which are in good standing therein, affecting the right of these physicians to be registered or admitted to practice in that state, then the same or like burdens, obligations, requirements, disqualification, or disability shall be put upon the registration in this state of physicians registered in that state or holding diplomas from medical colleges situated therein."

Sec. 147.04, Minnesota Statutes for 1945.

Licensure Experience of the Minnesota State Board of Medical Examiners

From 1928 to 1948, inclusive, the Minnesota State Board of Medical Examiners has licensed 5,063 physicians as follows:

By examination	4,194
By reciprocity with other states	562
National Board of Medical Examiners	307
Total	5,063

The records of the Medical Board disclose that within the past 21 years over 99 per cent of those taking the examination have passed and have been licensed.

Commencing with 1928, physicians have been required to register annually with the State Board of Medical Examiners. In 1928 Minnesota had 3,279 registered physicians of whom 3,051 registered from within the borders of Minnesota. In 1948 Minnesota had 5,737 registered physicians of whom 4,108 were registered from within the borders of the State, a net gain of 1,057 physicians within the State. Minnesota has a ratio of one physician to about 700 persons.

Requirement of Citizenship for Physicians and other Professional Groups

Lawyers

Rule 2 of the Supreme Court of Minnesota in reference to the admission of lawyers to practice law in the State of Minnesota, provides that the applicant shall be twenty-one years of age, of good moral character, a citizen of the United States of America and a resident of the State of Minnesota.

Dentists

"Every applicant for a license to practice dentistry, whether by examination or reciprocity, shall produce evidence satisfactory to the board that he is a citizen of the United Sates."

Sec. 150.04 Minnesota Statutes 1945.

Pharmacists

"To be entitled to examination by the board as a pharmacist the applicant shall be a citizen of the United States, of good moral character, at least 21 years of age, and shall be a graduate of the college of pharmacy of the University of Minnesota or of a college or school of pharmacy in good standing of which the board shall be the judge and shall have at least one year of practical experience in pharmacy."

Sec. 151.10 Minnesota Statutes 1945.

Physicians and Surgeons

The Minnesota State Board of Medical Examiners has been of the opinion for a number of years that every person who practices medicine in Minnesota, should be a citizen. The duties of a physician are many and varied; he is not only called upon to take care of his patients, whether it be in the office, hospital or home, but he is also called upon to appear in Court as a witness for his patient, as an expert witness designated by the Court in criminal cases, sanity hearings, etc. Because of the close personal relationship occupied by a physician with his patient and with matters pertaining to the Courts and Government, the Medical Board was of the opinion that these facts alone justified the requirement of citizenship. The Medical Board also felt that it was manifestly unfair to have doctors of American citizenship discriminated against in European countries, and at the same time, license doctors from those countries practicing such discrimination. During World War II the United States Government declined to grant commissions in the Medical Corps of the Army or Navy to doctors who were not citizens.

The Medical Board made an exception in reference to Canadian doctors for three reasons:

1. Canadian medical schools are inspected and evaluated the same as American medical schools.
2. It is a relatively simple matter to check up on the background of a Canadian medical applicant.
3. None of the Canadian Provinces require an American doctor to surrender his citizenship as a pre-requisite to Canadian medical licensure.

Requirements of Minnesota Basic Science Law

There are only four requirements to take the Minnesota Basic Science examination. They are as follows:

1. The applicant must be twenty-one years of age or over.
2. The applicant must be of good moral character.

3. The applicant must have an education equivalent to graduation from an accredited high school of this State.
4. The applicant shall pay a fee of $15.00.

The provisions of law pertaining thereto are as follows:

"Any person not hereinafter excepted from the provisions of this chapter desiring to practice healing in this state shall apply to the secretary of the state board of examiners in the basic sciences, on blank forms prepared and furnished by it, to be examined in the basic sciences at the next examination therein following the making of such application and for a certificate of registration in the basic sciences, accompanying such application with a fee of $15.00 and sufficient and satisfactory proof that the applicant is 21 years of age or over, is of good moral character and has an education equivalent to graduation from an accredited high school of this state; provided, that no applicant shall be required or requested to disclose in such application the professional college or university he may have attended nor the branch or system of healing which he intends to pursue. Examinations shall be in the basic sciences only and may be both written and by demonstration or other practical test, as the board may determine."

Sec. 146.06 Minnesota Statutes 1945.

You will note from the foregoing Section that the Basic Science Board is forbidden to make inquiry as to the college or university attended by the applicant or the branch of the healing arts that the applicant intends to pursue. There are two reasons for that provision being in the law; the first one is to prevent any discrimination as to an applicant who desires to practice osteopathy or chiropractic. The second reason is that the basic science law is merely a prequalifying examination in six subjects: anatomy, physiology, pathology, bacteriology, hygiene and chemistry. A basic science certificate does not authorize the holder to engage in the practice of healing. It does authorize the holder to then apply to either the Medical Board, the Osteopathic Board or the Chiropractic Board, depending upon the branch of the healing arts that the applicant wishes to engage in.

Fraudulent Foreign Medical Credentials

The problem of determining the authenticity of foreign medical credentials has plagued the various state medical examining boards throughout the United States for many years. In November, 1935, the following communication was sent by the Secretary of the California State Board of Medical Examiners to the Secretary of the Federation of Medical Boards of the United States:

"For several years I have been impressed with the ease with which may be obtained medical diplomas from various universities in foreign countries. We have in mind the case of —— ——, Los Angeles osteopath, who assertedly obtained a medical diploma from the University of Berne, Switzerland, dated July 16, 1924, after a very brief course, which we understand did not exceed *three months.* ——— ——— assertedly obtained a diploma from the University of Lausanne, Switzerland, *without attendance.* He also obtained a diploma from the University of Naples, after not more than *four months attendance.* ——— ———, a Missouri veterinarian, prominently mentioned in the diploma mill scandals of 1924, obtained a medical diploma from the University of Budapest, although according to the *American Medical Journal* of June 18, 1927, page 73, he was unable to pass their examinations.

"These are but a few of the many instances that have come to the attention of the California Board of the laxity with which foreign medical diplomas are issued.

"Our experience has developed that practically none of the foreign medical schools, including Scotland and England, keep any accurate check on the daily attendance of the student. It appears to be a kind of 'free and easy,' the only interest lying in whether the student was able to pass the final examination.

"Another feature is the established habit in Germany of students going from school to school, making it practically impossible for said students to file an accurate outline of their medical course, such as is required in this country.

"The Council on Medical Education and the Association of American Medical Colleges have placed heavy restrictions on the medical schools in this country and yet state boards are constantly faced with applications from graduates of foreign schools, who cannot file satisfactory evidence that they have completed a course of instruction equivalent to that required in a United States Medical School.

"When a student transfers from one U. S. medical school to another, he must show under the rules of the above mentioned organization that he has fully completed a course of study and received passing marks before he may be given advanced standing in the second school. This is not so, to my knowledge, in foreign schools.

"The undersigned has had experience with fraudulent documents purporting to be medical diplomas issued in Russia, Belgium and one or two other foreign countries. It is impossible to verify any medical credentials from Russia, particularly if issued prior to the present regime. The documents that emanate from Soviet sources cannot be accepted in any degree of confidence."

Suggestions for Meeting Temporary Needs of Foreign Medical Graduates

On an experimental basis from the standpoint of protection of the public health, it is doubtful if the problem of medical licensure of foreign medical graduates can be solved by simply amending the requirement of citizenship or the recognition of European medical schools. Since there is in existence no evaluating agency for the inspection and grading of European medical schools, it is necessary to examine the various articles that appear from time to time on this subject. In February, 1948, Dr. Irving S. Wright, Associate Professor of Clinical Medicine, Cornell University Medical College, New York, presented a paper on MEDICAL EDUCATION IN GERMANY AND AUSTRIA. Dr. Wright made a survey of medical education in Germany and Austria in 1947 with Dr. Edmund Horgan under the auspices of the Surgeon General of the United States Army. In his paper on that subject Dr. Wright said the following:

"It will be made clear from my discussion that there is a considerable discrepancy between the potentialities for medical education among the various medical schools of Germany and of Austria today, and this will be perpetuated until such a time as they are all in better position from the point of view of materiél and faculty. It now appears that this improvement will be slow to occur, and in some instances the universities may never achieve their former stature.

"There are five major facets essential to medical education; a well trained faculty; suitable buildings for the preclinical and clinical teaching, including hospital facilities; adequate supplies and equipment for the laboratories necessary to the training of the students and the carrying on of research; a patient volume load of sufficient size and variety to permit experience in a large number of diseases, and a well selected student body. All are vital. The faculty and the carefully chosen student body are the most important. Today, in Germany and Austria, the clinical material is the only ingredient which may be considered as adequate."

Speaking further on the subject of the destruction of medical buildings by bombing, Dr. Wright pointed out:

"Even two years later, at the time of our visit (University of Munich) major portions of the medical school remained heaps of rubble, and the surgical clinics were far from rebuilt. Large numbers of students crowded about in totally inadequate facilities, and relatively little active rebuilding was in process. * * * A similar report could be given in reference to most of the universities. * * * Chemical supplies are at a premium. It is perhaps symbolic of the high degree of destruction of scientific civilization when one finds that at the University of Munich, long famed for its fine chemical research, the determination of blood sugar studies is frequently impossible because of inadequate chemicals necessary for this simple test." * * *

"There is no penicillin available to the German hospitals; there is no streptomycin. Some sulfonamide drugs are available."

RESULTS OF EXAMINATIONS OF FOREIGN PHYSICIANS

(New York)

Year	Number Examined	Passed	Failed
1938	1,211	511	700
1939	1,770	521	1,249
1940	1,644	540	1,104
1941	1,558	575	983
1942-45 (incl.)	4,975	2,878	2,097
1946	315	106	209
	11,473	5,131	6,342

In discussing the large number of students enrolled in the medical school in Germany and Austria, Dr. Wright comments as follows:

"Appointment on political basis has resulted in tremendous overcrowding. For example in Vienna there were 3,500 medical students out of a total student body of 7,000. It was reported that at Munich there were 4,000 registered in the medical school, with 3,000 on the waiting list. Most of the other schools had from 1,800 to 3,000 medical students. Only the smaller ones had as few as 1,200. Inquiry indicated that the faculty members were inclined to believe that all of these students who so elected would eventually graduate. They have several opportunities to pass each set of examinations without being eliminated from medical school."

In his summary Dr. Wright stated:

"Medical education in Germany is at an extremely low level at this time. The Universities of Heidelberg and Wurzburg are the most satisfactory. Medical education in Vienna is somewhat better, but is handicapped by over crowding. * * * *Students graduating from these schools have not received a medical education comparable with that obtained in medical schools in this country.* This situation should be subjected to continuing analysis and recording by the boards of licensure so that in the future gradnates from these schools who apply for license to practice in the United States may be properly evaluated."

The Minnesota State Board of Medical Examiners at its last meeting decided to ask that this entire problem be made the subject of discussion at the annual meeting of the Federation of State

(Continued on Page 147)

MINNESOTA'S MATERNAL AND CHILD HEALTH PROGRAM

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Minneapolis, Minnesota

TO acquaint the physicians of this State with the activities of the Maternal and Child Health Division of the Minnesota Department of Health, the following discussion is presented. All public health programs depend upon the wholehearted interest and co-operation of all agencies interested in health, such as the State Medical Association, the State Dental Association, University of Minnesota, the State Department of Education, as well as the voluntary agencies. It is particularly important that the medical profession be familiar with our objectives, our general program, the special problems involved and our results. Physicians need the assistance of health workers to help them in their professional work; public health requires the active and enthusiastic interest and support of all physicians to attain its objectives.

According to W. G. Smillie, Professor of Public Health and Preventive Medicine at Cornell University Medical School, "the most effective and the most important part of the community plan for promotion of the health of the individual, is the child health program." The younger the age group with which we work, the more effective will be the results that are achieved. While parents are unlikely to change their personal habits, they are quite willing to use the new knowledge of preventive medicine for the care of their children.

Our Objectives

1. To minimize risks of childbirth—disability and death.
2. To give each baby that is born the best possible chance of survival.
3. To help each child to grow up to maturity, as free as possible from any defect—physical, mental or emotional.

Requirements

1. Well-trained physicians for obstetrical care and pediatric care.
2. Well-equipped hospitals.
3. Antepartum and postpartum supervision.
4. Home nursing and public health nursing supervision.

There are three approaches to a public health program in maternal and child health: (1) prevention, (2) health education, and (3) medical care. In Minnesota the program is limited basically to preventive public health services and health education. Medical care is not included except for the federally financed Emergency Maternity and Infant Care program for the wives and infants of servicemen. The maternal part of the medical care was terminated July 1, 1948; the infant care program is now in process of liquidation and will terminate April 19, 1949.

Services rendered through Maternal and Child Health Division

1. *At State Level*
   - (a) Consultation and advice on maternal and child health programs and problems—(To other Divisions of the Health Department, PTA, Division of Social Welfare, Bureau of Crippled Children, State and County educational agencies, local Health Officers).
   - (b) Aid to local communities in developing sound plans and programs.
   - (c) Organization of groups for teaching maternal and child health classes.
   - (d) Promotion of distribution of literature and educational activities.
   - (e) Postgraduate courses in obstetrics and pediatrics for practicing physicians and nurses through co-operation with the University of Minnesota and professional groups.
   - (f) Special assistance in pediatric studies:
     Problems in hospital nurseries, premature program, acute infectious diseases, at request of hospitals or State hospital licensing unit.
   - (g) School health program—school health consultant assists in developing health services, health instruction, school sanitation, summer round-up, et cetera, in co-operation with ,State Department of Education and local schools.
   - (h) Financial subsidy—to public health nursing services:
     State subsidy to county public health nursing services ($1,500 per year).
     Federal subsidy ($1,000 per year for three years) for each new nurse added.
     Demonstration services to full-time health department and county nursing services.
     Indian nursing services.
2. *Nutrition Unit*
   Improvement on food and nutrition practices of expectant and nursing mothers, infants, growing children, workers in industry and other adults in family:

Dr. Rosenfield is Acting Director—Division of Maternal and Child Health Minnesota Department of Health.

By development and promotion of use of education information and methods.
By providing consultation to public health and allied workers.
By direct service through talks to groups and conferences on demonstration basis.

Our first problem is maternal health. If we are to maintain our low maternal death rate, we cannot become complacent but must continue and intensify our efforts. We must emphasize the importance of good and adequate prenatal care, obstetrical care, and proper postnatal care by physicians well trained in obstetrics, in well-equipped hospitals with modern facilities for the delivery of babies. Of Minnesota's 75,468 births in 1947, 96.7% occurred in hospitals, and only 3.3% were home deliveries.

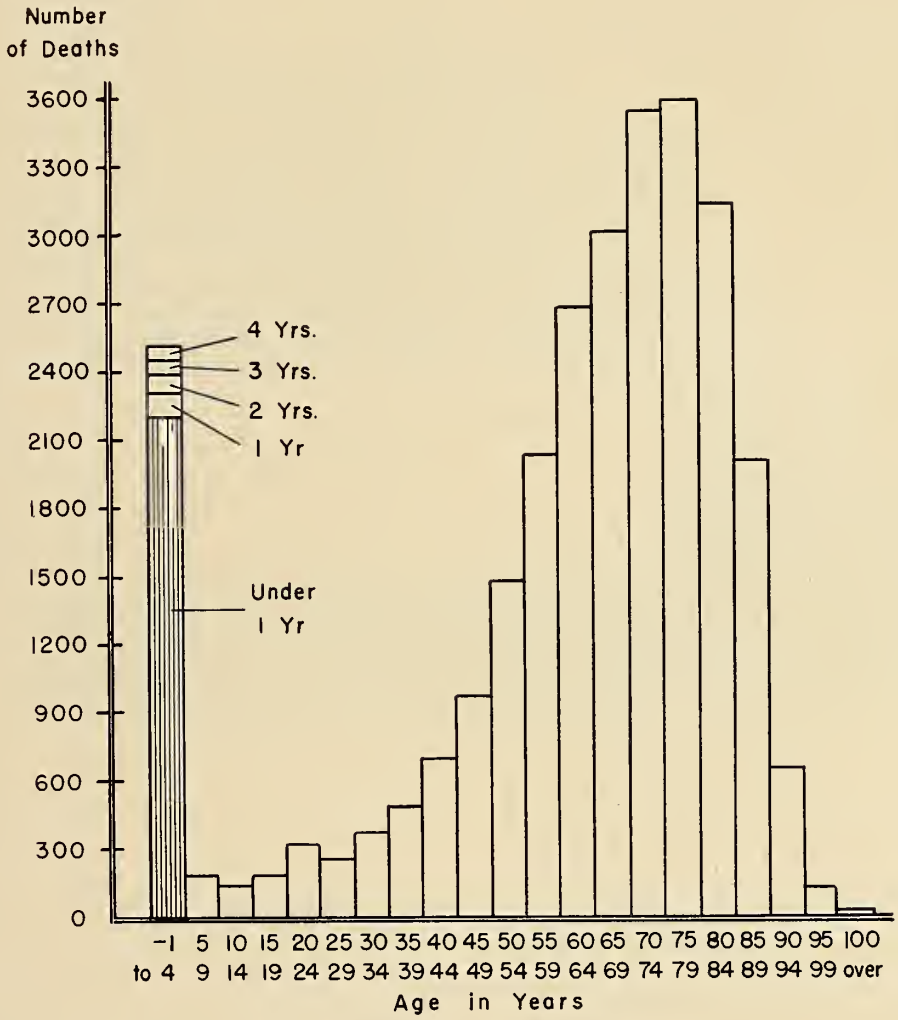


Fig. 1. Total deaths, by age, in Minnesota—1947.

3. *State District Health Offices*
   (a) Advisory nurse gives consultation, advice and supervision to local public health and school nurses on maternal and child health program planning, promotion of distribution of literature and other educational activities, promotion of classes, and loan of audiometers for hearing testing programs.
   (b) Nutritionist gives consultation service to public health and school nurses, prepares and conducts nutritional education program.

Now let us consider some of the specific problems in a Maternal and Child Health program.

Our efforts are directed to assistance in prenatal and postpartum clinics where they have been established. Advisory nurses of the Health Districts give advice and consultation and supervision to local public health nurses in the field. A maternal and child health nurse consultant as-

sists advisory and field nurses and hospitals in developing programs throughout the State, assists in county problems such as high infant mortality rates, gives demonstrations, holds classes and

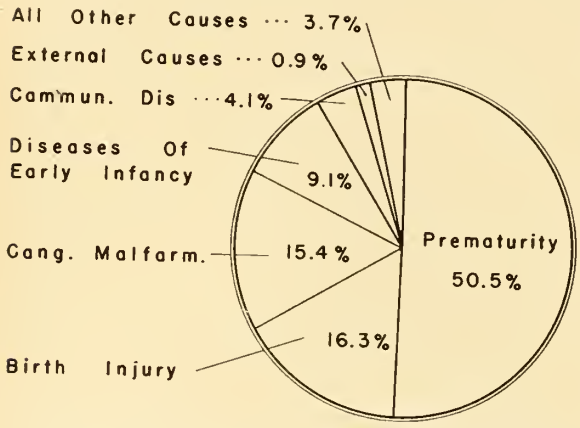


Fig. 2. Distribution of the cause of death of 9,373 infants reported dying in the first month of life in Minnesota—1941-1947, inclusive.

meetings, gives radio talks, and distributes authoritative educational literature. Films and exhibits are also available. Our nutrition program is devoted to the improvement of food and nutrition practices of expectant and nursing mothers, infants, growing children and adults. It provides consultation to public health and allied workers and carries out an educational program by talks, exhibits and literature. In addition, studies on food consumption of pregnant women as well as studies in co-operation with dental surveys in schools are being carried out. Postgraduate courses for physicians are given periodically, in co-operation with the State Medical Association and University of Minnesota, to bring the latest scientific information to them. A three-day course on obstetrics, premature and newborn care for general practitioners, will be held soon at the Continuation Center with all expenses paid for those selected by medical societies to attend the course. Study of causes of deaths of mothers so that adequate steps may be taken to reduce them even lower than they are now, will be carried out jointly by the State Medical Association and the State Department of Health.

Neonatal deaths constitute one of our most serious problems. While infant mortality has declined markedly from 70 per 1,000 live births in 1915 to 28.6 in 1947, the decrease of 59 per cent has occurred from the age of one month to one year and not in the first thirty days of life. It is of interest to note that the total number of deaths under the age of one year is greater than the total deaths occurring from age one through age thirty-five. This total is not reached again until the five-year period from ages fifty-five to sixty years (Fig. 1). The major causes of neonatal deaths are prematurity, birth injuries, malformations and infections, as shown on the pie diagram which gives the actual percentages during the past seven years (Fig. 2). These deaths constitute 73 per cent of all deaths occurring under the age of one year.

Prematurity is responsible for one-half of the neonatal deaths. It is also in this group of deaths that the possibility for continued reduction in infant mortality lies. Prematurity was the ninth leading cause of death in Minnesota in 1946 and 1947, while tuberculosis ranked as the tenth leading cause of death. To reduce these deaths, we must continue to emphasize the importance of better medical and nursing care by instruction of local physicians on the latest practice in obstetrics and infant hygiene by short courses at the University; instruction of local public health nurses in hygiene of maternity and infant care with continuous supervision of their work; instruction of newborn and premature nursery supervisors and nurses in modern techniques and standards of hospital practice; instruction to mothers in simple principles of infant hygiene, as well as adequate prenatal care, by classes, pamphlets, letters, radio talks and personal conferences; adequate facilities for care of premature infants—hospitals, incubators, trained nursery personnel, modern hospital and nursery standards and practices. There should be available consultation by a pediatric nursing consultant or pediatrician to help reduce infant deaths by teaching hospital nursing techniques and standards, as well as diagnosis, treatment and prevention of pediatric problems such as premature care, birth injuries and communicable diseases.

During infancy there must be emphasis on protection from communicable disease. During 1947 there were twenty-five deaths from whooping cough under the age of one year, seventeen deaths from measles at all ages, and twenty deaths from diphtheria at all ages, with 37 per cent under the age of five. Too much emphasis has apparently been placed on preschool immunization and not enough on the importance of early protection,

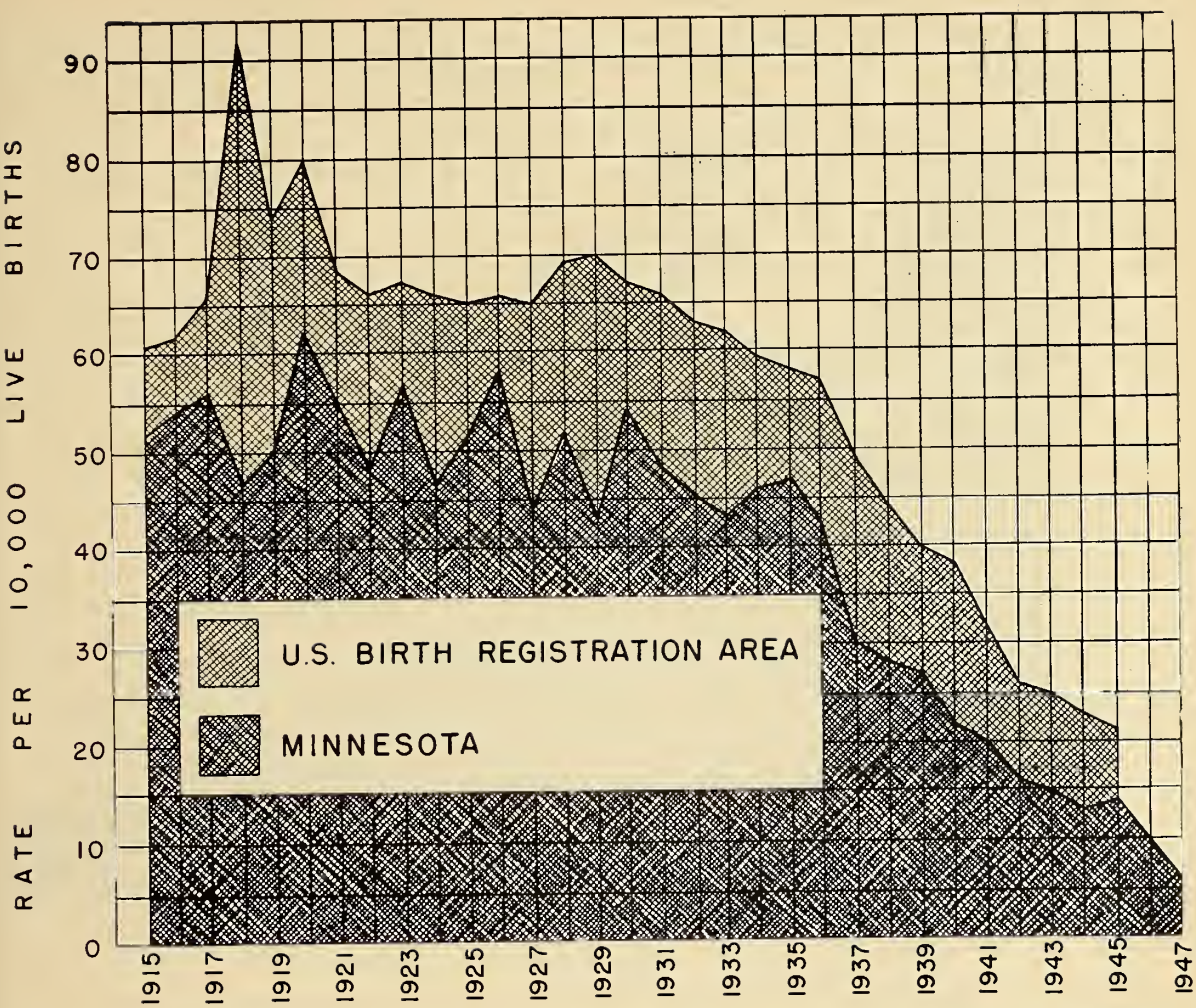


Fig. 3. Comparison of maternal death rate per 10,000 live births in Minnesota with those in the United States Death Registration Area—1915-1947.

during infancy. Most physicians insist that their infant patients are well protected in their practice. Yet our studies indicate that, in general, considerably less than 50 per cent of the children are fully protected by the age of five, on entrance to school. Early vaccination and immunization for whooping cough, diphtheria, tetanus and smallpox are necessary and should be completed by the age of one, with booster doses as indicated. Biologics for vaccination, immunization and treatment are available on request, free of charge. There should be periodic examinations of infants, proper feeding and food habits and mental hygiene with good habit training, through private physicians, public health nursing supervision and community health centers.

The preschool child requires health protection and the prevention of communicable diseases by immunizations and vaccinations, public health nursing services in the home, establishment of sound nutritional food habits, good habit training and mental adjustment to life situations, provisions for detection of incipient disease, the correction of physical defects and dental care.

At the school age level, in co-operation with the State Department of Education and local schools, child health requires emphasis on modern standards and techniques for school health services, modern teaching material on health and consultation service on medical examinations made by local physicians. A "School Health Manual" jointly prepared by the State Department of Education and the State Department of Health was recently published. It has been well received by educational and health workers in Minnesota as well as in a number of other states. A nutrition program for the development of good food habits in children, a program for the correction of de-

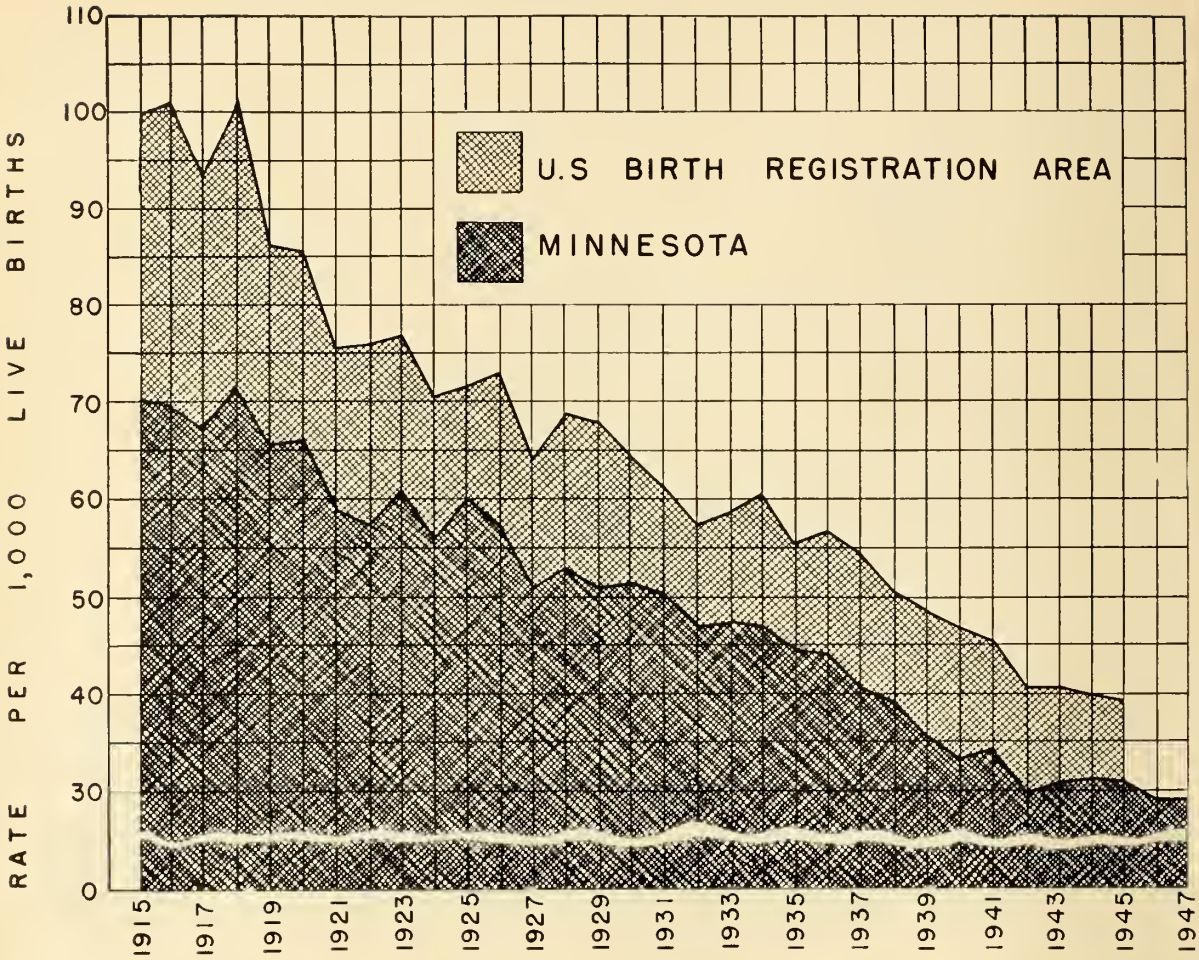


Fig. 4. Comparison of rate of deaths under one year of age per 1,000 live births in Minnesota with those in the United States Birth Registration Area—1915-1947.

fects by available community resources and in-service training for teachers on health is essential. The establishment of school health councils as a part of county or community health councils is important. One special problem in this age group must be mentioned. Accidents are the leading cause of death between the ages of one and fifteen, and an outstanding cause of disabling and permanent injuries among children. Of the 1947 accidental deaths in Minnesota in 1947, 284 occurred between birth and 15 years of age. Notwithstanding the work of various groups in the schools and elsewhere on accident prevention and safety, results are not significant and the death rate stays high. The child accident mortality rate shows a much smaller decline than does the rate for any of the other causes of death among children. A school educational program is being developed, designed (1) to recognize the accident hazards confronting young children; (2) to provide and maintain safe conditions for the child in the home, school and playground; and (3) to help the child to develop safe practices through proper example and guidance.

Of the special studies being carried out in our maternal and child health program, one in particular should be mentioned. For the past year a study on methemoglobinemia in infants has been in progress. Approximately 100 cases have been reported and investigated. This condition has occurred during the first three months of life in infants who were fed on diluted milk formulae, using water with high nitrate content, from poorly constructed farm wells. The usual symptoms are lethargy and cyanosis, occasionally with diarrhea, and the blood is chocolate colored. There have been ten deaths. To confirm the diagnosis we have available an electric photometer and are prepared to

examine the infant's blood for methemoglobin, on telephone request to our office. A brief description of the occurrence, diagnosis and treatment of this condition was recently mailed to all physicians.

As an evaluation of our results let us consider for a moment our infant and maternal mortality rates during the past thirty years. The maternal mortality rate for Minnesota in 1915 was 52.0 per 10,000 live births; the U. S. rate was 61.0. In 1945 the rate for Minnesota was 14 per 10,000 live births while the U. S. rate was 21.0. In 1947 the rate in Minnesota dropped to 6 per 10,000 (47 maternal deaths in 75,468 live births). The U. S. rate for 1947 is not yet available but our rate is one of the lowest, if not the lowest, rate in the United States. (Fig. 3).

Our infant death rate in 1915 was 70.1 per 1,000 live births while the U. S. rate was 99.9. In 1945 our rate was 31.6 per 1,000 live births in comparison with the U. S. rate of 38.3. In 1947 the Minnesota rate dropped to 28.6, among the lowest in the country. (Fig. 4). It is of interest to note the variation in rates by counties. One Minnesota county had an infant death rate of 5.1 per 1,000 live births but other counties far exceeded our state rate. The highest rate in 1947 in one county was 61.6 indicating the necessity for special study as to cause and possible prevention.

The stillbirth rate has decreased similarly from 29.0 per 1,000 live births in 1915 to 17.4 in 1947. In comparison, the U. S. rate in 1915 was 39.4 while in 1945 it was 23.9.

While our maternal and infant death rates continue to be among the lowest in the United States, it should be possible to reduce our infant deaths still further. Continued close co-operation between physicians and the Division of Maternal and Child Health will result in better health for our mothers and children.

FOREIGN MEDICAL GRADUATES

(Continued from Page 141)

Medical Boards to be held in February in Chicago. The Minnesota State Board of Medical Examiners is of the opinion that a committee of not less than four doctors make a survey of all the medical schools in Europe where such a survey will be permitted by governmental authorities, the committee to have at least one member from each of the four following groups:

1. The Federation of State Medical Boards.
2. The Association of American Medical Colleges.
3. The United States Veterans Administration.
4. The Council on Medical Education and Hospitals of the American Medical Association.

Such a committee would then be in a position to make available its actual findings and recommendations to all of the state medical examining boards throughout the United States. A representative of the United States Veterans Administration is suggested for the reason that at the present time a considerable number of American citizens who served in the Armed Forces of the United States are studying medicine in European medical schools. A large portion of this group will undoubtedly return to the United States desiring to practice medicine.

PREFRONTAL LOBOTOMY FOR THE RELIEF OF INTRACTABLE PAIN

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IN 1936, Egas Moniz and Almeida Lima, of Lisbon, Portugal, reported the results which they obtained with prefrontal lobotomy in the treatment of certain mental diseases. In 1937, Freeman and Watts,[4] of Washington, D. C., reported the results which they obtained with this treatment in a similar group of cases. Since that time, prefrontal lobotomy has come to be generally recognized as a suitable form of treatment in certain types of mental illness when more conservative measures have failed to produce permanent results. It has been estimated by Freeman and Watts[7] that lobotomy has been performed approximately 2,000 times in the United States since this method of treatment was introduced in 1936.

It is no more than natural to learn that this operation has been found to have some contraindications as well as indications in conditions other than those of mental disturbance. Many patients who are mentally disturbed complain severely and bitterly of pain, which we consider to be functional in origin, in some particular part or organ of the body. Since these patients have been relieved by prefrontal lobotomy, it was only natural to consider the possibility that prefrontal lobotomy might relieve intractable pain of organic origin. This has been found to be true.

More and more often one hears of patients who have been relieved of intractable pain by prefrontal lobotomy. Freeman and Watts,[5,6,11] Poppen, Golla and others have written on the subject of relief of pain by prefrontal lobotomy. Davidoff of New York and Murray Falconer of New Zealand have told one of us (J. G. L.), in personal communications, of the performance of prefrontal lobotomy for intractable pain. We have been interested in prefrontal lobotomy in the treatment of mental disease for several years. One of us has performed this operation in cases of intractable pain, and a discussion of these cases will be presented in this paper.

At first we were loath to advise prefrontal lobotomy for pain alone just as earlier we were hesitant about performing prefrontal lobotomy for psychosis. As the years have passed and results from prefrontal lobotomy in mental disease have been so promising we have been encouraged to attempt the operation for intractable pain. At first, the operation was used for intractable pain of organic orgin associated with mental disease. Subsequently, prefrontal lobotomy has been used in the treatment of organic pain and "functional" pain in cases in which there was no psychosis. We have come to have the feeling that Freeman and Watts have so well expressed as follows: "In many cases the attitude of the patient toward his disease is more disabling than the disease itself; the fear of pain is greater than the pain. With prefrontal lobotomy the physician now has it in his power to relieve the fear, the anticipation and to render the illness more tolerable to the patient. Since this can be done without significant impairment of intellectual capacity, it would seem that prefrontal lobotomy might be a very considerable boon to the large number of patients whose lives will not be long but will nevertheless be made miserable by suffering."[7]

It should be added, also, that peace and happiness and concern of the family as well as the condition of the patient should be considered. Many of the patients suffering from intractable pain and particularly those who are dying of an inoperable malignant lesion cause a great deal of suffering among their friends and relatives and present a considerable burden because of the care which they must have. If their pain can be relieved by prefrontal lobotomy and their mental outlook on life changed to a more cheerful one, the problem of care during their last weeks and months of life is considerably lessened.

Although prefrontal lobotomy is a relatively simple operation to perform and although it can be performed in most cases with the patient under local anesthesia, it should not be recommended nor carried out without careful and due consideration, for of course it is a destructive procedure and the effects of the operation cannot be overcome; that is, the pathways which have been interrupted by the leukotome cannot be reestablished. Consequently, the disadvantages as well as the advantages of the procedure should be discussed very carefully with the patient in most cases and with the family in all cases, so that there

may be no misunderstanding if the results are not what one would anticipate. All too often when a surgical procedure is recommended or offered to a patient and his relatives, they of course, being human, expect or at least hope that the operation will result in cure. It is necessary in these cases to make it plain that the operation is performed in an attempt to relieve the patient of his pain and suffering and that it cannot possibly result in cure of the underlying disease which has been producing the intractable and unbearable pain.

Not only is the relief of pain one of the primary considerations for carrying out a prefrontal lobotomy in the patient suffering from incurable disease associated with severe pain, but the fact that when the pain or consciousness of pain is relieved, the use of narcotics is no longer necessary. Most of these patients who have been taking narcotics for a long time are troubled with constipation, indigestion and other disturbances of bodily functions. When the pain has been relieved and the use of narcotics is no longer necessary, the bodily functions proceed on a more normal basis, and this also gives peace of mind and comfort to the patient and to the relatives.

The technique which we used in the cases reported is that described by one of us in 1943.[9] A grade 3 operation was performed in each case.

Report of Cases

Case 1.—A widow, seventy-one years of age, was referred to a neuropsychiatric consultant at the clinic with a diagnosis of neuritis of an undetermined origin. The referring physician stated that the patient was having considerable pain the relief of which required large doses of sedatives. The patient registered at the clinic on July 8, 1946. She stated that on August 17, 1945, while sewing, she pricked her right thumb. The next day the thumb was swollen and red. There were vesicular lesions on the dorsum of the right hand and outer surface of the right arm. These lesions spread and involved the entire right arm and forearm. She experienced very severe pain which was still present when she came to the clinic. She described the pain as like that of knives twisting in her extremity. At the time of onset she was confined to a hospital elsewhere for ten days. The vesicular lesions disappeared; they were said to be those of "shingles."

Subsequently, the patient had a "nervous breakdown." On September 1, 1945, she was hospitalized elsewhere for one week because of continued pain, insomnia, nervousness, anorexia and mental depression. On October 15, 1945, she was hospitalized in a sanatorium because of the same complaints. She was given four electrotonic treatments which relieved the insomnia but had no effect on the pain; her mental condition was said by her only surviving relative, a son, to have been improved greatly.

On January 15, 1946, the pain increased. Insomnia developed again with mental depression. The patient stated that she did not want to live. She was again hospitalized and while in the hospital she was discovered out on the balcony ready to jump. On April 1, 1946, she was hospitalized in another sanatorium. She was given nine electrotonic treatments. These again gave her considerable relief from the insomnia, nervousness and depression, but the pain became worse. At the time the patient was admitted to the clinic, the insomnia was returning and she was taking large doses of sedatives. The patient also complained of tightness in her head which she described as a headache. Further, she stated that she felt as if there was a band around the frontal and occiptal regions of the head. A diagnosis of postherpetic neuralgia with reactive depression was made.

The patient's blood pressure was 140 systolic and 80 diastolic, expressed in millimeters of mercury. The general physical examination gave normal results for a patient of her age. A neurologic examination revealed that the right biceps reflex was less prompt than the left. The deltoid, biceps and triceps muscles on the right side were slightly weaker than the corresponding muscles on the left side. There were no other neurologic findings.

Prefrontal lobotomy as a method of treatment both for the reactive depression and for the postherpetic neuralgia was offered the patient and her son. The indeterminate prognosis was carefully explained to them. After thinking the problem over, the patient came back to the neuropsychiatric consultant in a happy mood because we had offered something that she thought would be beneficial to her. The son stated that he wished the operation performed because he was afraid that if we did not operate, his mother would commit suicide. On July 17, 1946, a bilateral prefrontal lobotomy, grade 3, was performed with the patient under local infiltration anesthesia.

The patient's convalescence was prolonged owing to the fact that she showed a moderate degree of confusion after the operation, and it was necessary to restrain her because she could not control the bladder and bowel satisfactorily. The sutures were removed from the incisions in the skin on the fourth postoperative day. Up until the last week of her stay in the hospital she was disoriented for place, but she was well oriented for time and person. At the time the patient was dismissed from the clinic on August 17, 1946, she had regained her orientation for place, the bowel and bladder habits were re-established, the patient no longer complained of pain and her depressed status had dramatically disappeared. No sedative whatever was required after the operation.

Case 2.—The patient first registered at the clinic on April 25, 1938, at which time he was forty years of age. His chief complaint was pain on the left side of the face and head. The patient stated that when he was eighteen years of age he had had a tonsillectomy and adenoidectomy to improve the hearing in his right ear.

He had had chronic otitis media since childhood and he could not hear with the left ear. While in college he had an appendectomy and multiple sinus and nasal operations. He had had the ethmoid, sphenoid, frontal and maxillary sinuses all operated on and all had drained repeatedly. A submucous resection also had been performed.

About 1928 or 1929, he started having trouble with pain in his face and head. The onset of the pain in the left side of his face and head, which was his chief complaint, was in 1929. He had repeated injections of alcohol into various branches of the trigeminal nerve on the left side. He had a resection of the peripheral branches of the maxillary division with no relief. In 1932, he had a resection of the sensory root of the trigeminal nerve on the left side. His pain was relieved but he still had trouble. Then he had a radical left mastoidectomy.

In 1934, the trigeminal nerve was operated on again. Technical difficulties were encountered apparently, and six weeks later the surgeon elsewhere re-entered the temporal area and divided some fibers, with no benefit to the facial pain. He had more injections of alcohol in 1936. Later, another surgeon removed the cervical plexus of nerves on the left for pain, but the pain was unaltered. With increased pain the patient stated that he would faint. He never hurt himself and the syncopal attacks always occurred at home or under emotional strain.

Neurologic examination disclosed that the left corneal reflex was absent. There was anesthesia over the distribution of the left trigeminal nerve. The motor component of the left trigeminal nerve was intact. No further surgical treatment was advised at that visit to the clinic.

The patient returned to the clinic November 13, 1946, stating that his facial pain had continued after his previous visit. In June, 1938, he had gone to another institution and had had a left transtemporal operation. After this operation, the patient was relieved of his syncopal attacks but pain was unaltered. In March, 1946, there had been a sudden onset of continuous hiccough night and day. Nothing would give the patient relief. He had had general anesthesia on occasion in order to stop the hiccough. Simultaneously, bilateral occipital headaches developed, with radiation to the right facial area. He would have, on an average, three such attacks per week, and the attacks would last for twenty-four hours. The attacks would awaken the patient at night. They were made worse by coughing, sneezing and straining.

Examination at the time of his return to the clinic revealed weakness of the muscles innervated by the motor branch of the left fifth cranial nerve, persistence of corneal anesthesia and complete anesthesia in the region of the sensory distribution of the left fifth nerve. Because of chronic drainage from the right ear due to otitis media, a radical mastoidectomy on the right side was performed on November 22, 1946. This operation failed to give the patient relief from his pain. Tetraethylammonium chloride was cautiously administred intravenously with no change in the pain in the patient's face and no change in his hiccough. In fact, the observer felt that the hiccough may have been made a little worse. One of us (J.G.L.) was asked to see the patient regarding the performance of a bilateral prefrontal lobotomy in an attempt to relieve him of the distressing pain-in-the-face syndrome. It was hoped, also, that the operation might be beneficial in relief of the hiccough. Without a promise of any benefit, the patient was offered the procedure on an optional basis. He went home, considered the matter and returned requesting that the operation be performed, since he continued to have the severe pain in the face and hiccough.

On February 3, 1947, with the patient under general anesthesia at his own request—usually the operation is performed under local anesthesia—a bilateral prefrontal lobotomy, grade 3, was carried out without incident. Although the patient had been accustomed to taking large doses of sedatives, he required no sedatives after the operation. When he was dismissed from the clinic on February 19, 1947, his head wounds were well healed. While in the hospital he experienced the development of a lesion characterized by extensive brawny induration of the left thigh which was incident to previous self-medication. After the lobotomy the patient experienced relief from the pain in the face and from the hiccough.

Case 3.—A white woman, seventy-two years of age, came to the clinic in May, 1947, because of burning pain in the bladder. Her husband had died eleven years before from a stroke and disease of the prostate. She had one son living in fair health and one daughter living and well. At that time we got a history that the patient had had a severe attack of cystitis about forty years before. The cystitis had followed a bad cold. A cystoscopic examination on May 30, 1947, revealed only a small clear cyst in the urethra at the 10 o'clock position. This cyst was considered of questionable clinical significance. The rest of the general examination gave entirely negative results. Also neurologic examination gave negative results. The patient was moderately depressed. She was referred to a psychiatrist who had treated her previously. Previously she had been treated with electrotonic therapy elsewhere in a mental hospital and after two months she had felt quite well. Later she had been hospitalized again for three months, during which she had received fifteen electrotonic treatments. As a result, she apparently had become well and had been able to take care of the house. The benefit from the electrotonic treatments had not, however, been sustained.

In June, 1947, the patient began to have pain in the bladder, became nervous, unable to sleep and depressed and she felt like crying continuously. At that time, she requested admission to a mental hospital on voluntary application; she was admitted on July 24, 1947. A physical examination gave essentially normal results. The blood pressure was 134 systolic and 80 diastolic. The neurologic examination showed an increase in the reflexes. No abnormal reflexes were noted. The results of serologic examination of the blood and spinal fluid were normal. Mentally, the patient was depressed and she was very anxious to have electrotonic treatments.

It was the opinion of one of us (M.C.P.) that such treatments might help temporarily, but he advised that a prefrontal lobotomy would be more advisable. The patient was very anxious to have this operation performed. She stated that life was unbearable to her the way she felt at that time. The patient and her son both requested that the operation be performed. A diagnosis was made of agitated depression and indeterminate bladder pain, for which the patient underwent a bilateral grade 3 prefrontal lobotomy on August 13, 1947.

Eight months after operation the patient had no bladder pain and her agitation had completely cleared up.

Case 4.—A white man, thirty-seven years of age, registered at the clinic on January 29, 1945. His chief complaint was of pain in both hands for which he previously had had a bilateral sympathectomy. He presented a very difficult problem. It was the opinion of a consultant in the section on vascular diseases that the pain was not on the basis of a vascular disease; he preferred instead to classify it as a causalgia. The patient had been taking morphine for two years but said that he took it only for relief of pain; he had gone without morphine for as long as six days during the past month. The onset of his pain had been bilateral in the tips of the second, third, fourth and fifth fingers.

After sympathectomy the patient obtained complete relief on the left side and complete relief on the right for a period of two months; then there was recurrence of pain and added trigger areas over the back of the elbow and the upper scapular region. There was a postoperative Horner's syndrome on the right. The results of neurologic examination were essentially normal, except for some atrophy of the right suprascapular muscle. Cutaneous sensation in the right upper extremity could not be tested accurately because touching the hand would set off severe paroxysms of pain. A sweating test done with the aid of a baker on December 6, 1945, revealed sweating throughout the skin area of the chest, the left upper extremity and the left side of the face. There was no sweating on the right side of the face or over the right shoulder and the anterior surface of the right arm. On December 10, 1945, a bilateral cervicothoracic sympathetic ganglionectomy and trunk resection according to the Adson technique through the first rib was performed for the causalgia. Immediate relief of pain was obtained, the patient could shake hands, his skin was not hypersensitive and he was able to give up his sedatives. On December 19, 1945, a postoperative sweating test done with the aid of a baker revealed complete absence of sweating over the head, face, both extremities and upper part of the chest.

The patient returned to the clinic June, 1946, stating that after the bilateral cervicothoracic sympathetic ganglionectomy he was perfectly well for three and a half months. His hands were painless. They were constantly warm and dry. He was about ready to return to work. At that time, however, he had an abscessed tooth which required extraction. After this, he began to have recurrence of pain and hypersensitivity of the distal two-thirds of the left second, third, fourth and fifth fingers which spread to involve the same fingers of the right hand after six or eight hours. He stated that the only thing that would give him relief was morphine sulfate.



Fig. 1 (Case 4). Contractures of palmar fasciae resulting in Dupuytren's contracture.

On examination, nothing special could be noted except that a Dupuytren's contracture of each hand was developing. A sweating test performed on June 19, 1946, revealed an absence of sweating except over a small area of the anterior surface of the left arm and along the ulnar side of the left forearm. Another sweating test was done July 29, 1946, and at this time there was definite sweating in both hands, some in both arms and considerable on the left forearm. At this time it was felt that no further nerve operation would be done. The patient was given a trial of treatment with diphenhydramine hydrochloride (benadryl) and histamine, neither of which benefited him. He was taking, on an average, ¼ grain of morphine four times a day.

Since the sweating test showed that there was some sympathetic innervation getting through to the upper extremities, on August 5, 1946, a bilateral anterior approach to the cervicothoracic sympathetic system was carried out. The scar tissue at the site of previous removal of the stellate ganglia on December 10, 1945, was explored carefully and the scar tissue was resected. The pathologist found, on microscopic examination of the scar tissue, some sympathetic nerve tissue of a neuromatous type, and one small ganglion cell station was identified on the right side. After this operation, the patient was free of pain, and sweating was abolished from the upper extremities again.

However, after the patient had been at home for about three weeks, doing very well, the pain in the finger tips started again. The patient stated that the pain this time was worse than it had ever been. The pain was aggravated by changes in temperature and by nervousness. The pain this time was located not only in the fingers but in the hands. The thumbs still were not involved. The patient this time had rather severe contractures of the palmar fascia of both hands (Fig. 1). He was taking 2 to 3 grains of morphine a day. His wife, a registered nurse, had to dress and undress him and had to feed him as his hands were so sensitive that he was unable to do anything for himself. In spite of the

good care his wife was giving him, he was losing weight and appeared cachectic (Fig. 2). A sweating test revealed just the slightest amount of sweating over the palms



Fig. 2 (Case 4). (*a*) Posterior view showing marked wasting as a result of severe pain and excessive use of opiates which were required for relief of pain. (*b*) Anterior view showing pinched facies and dejected appearance.

of each hand. It seemed to all of us who saw the patient that nothing short of a prefrontal lobotomy was likely to relieve him. The situation was discussed very frankly with the patient and his wife. They were told of the advantages and disadvantages. They both requested that the operation be performed.

On July 16, 1947, with the patient under local anesthesia, a bilateral prefrontal lobotomy, grade 3, was performed for bilateral intractable pain in the hand. After the bilateral prefrontal lobotomy, the patient obtained complete relief from his pain and required no sedation. A sweating test performed July 24, 1947, two days before dismissal, revealed the slightest amount of moisture in the palms of both hands. The patient was dismissed from the clinic on July 26, 1947, smiling (Fig. 3) and no longer having the appearance of dejection and depression. A letter received from the patient's wife on November 17, 1947, stated that she was having considerable difficulty with the patient who presented a behavior problem. The wife stated further that he now weighed 150 pounds (68 kg.) and looked wonderful but that he was having temper tantrums and that it was difficult for her to cope with the situation. She did not state whether or not it was necessary to give him any sedative. She stated that at times he did have some pain in the right hand. Institutional care was recommended.

Case 5.—A white woman, aged fifty, had a bilateral prefrontal lobotomy, grade 3, on November 28, 1947, because of intractable pelvic and peritoneal pain, secondary to malignant disease. This patient had undergone a combined abdominoperineal resection for carcinoma of the lower part of the rectum on August 2, 1943. The tumor was at the anal margin and was a grade 1 colloid carcinoma 3 cm. in diameter, with perirectal extension. This patient was a local person who had been under observation at the clinic for many years. At the time she was readmitted to the hospital, she was found to have recurrent metastatic carcinoma of the rectum with perineal and pelvic masses and some fullness of the liver. She was suffering from excruciating pain which required $\frac{1}{16}$ grain of dilaudid (dihydromorphinone hydrochloride) every two hours. Radium therapy had failed to control her pain. One consultant made a note that all manner of sedatives had been given without particular effect. He recommended a trial of large amounts of vitamin C, 500 mg. a day, and the use of cobra venom. Among the sedatives and narotics used were dilaudid, pantopon, demerol hydrochloride (merperidine hydrochloride), morphine and codeine. Each in turn seemed to lose its effect within a short time.

In an attempt to relieve this patient of her pelvic and perineal pain, diagnostic and therapeutic injections of metycaine hydrochloride and dolamine were given. Injections were given paravertebrally and into the sacral canal. The relief obtained from the use of dolamine was of relatively short duration. Finally, because the patient could not eat, was suffering from constipation, was vomiting and was experiencing severe pain which could not be controlled with usual narcotics, a prefrontal lobotomy was considered as a palliative procedure to relieve her of her pain, particularly because she had become so depressed that she was considering self-destruction in order to get relief.

On November 28, 1947, with the patient under general anesthesia produced by pentothal sodium (sodium 5-ethyl-5-(1-methylbutyl)thiobarbiturate) given intravenously, a grade 3 bilateral prefrontal lobotomy was performed without incident. After the operation the patient was free of pain, she could eat without nausea and vomiting and her bowels began to move normally; in fact, a diarrhea which necessitated the administration of codeine developed. Her expression changed from one of depression to one of happiness. She took an interest in current affairs and liked to visit with many of the staff whom she had known very well. For thirteen days following the operation, she was free of

pain and required no sedative. On the evening of the thirteenth postoperative day, after an uneventful convalescence and after advice that she could go home, she became upset and it was necessary to institute sedative therapy. This upset occurred because the situation at her home was such that she could not return there.

The patient continued to receive relatively small doses of an effective sedative until her death sixty-one days after prefrontal lobotomy. During the time she was in possession of her faculties, she took care of herself and enjoyed visits from the doctors and her friends. An interesting postmortem finding in addition to the widespread carcinoma was a large duodenal ulcer which had perforated onto the anterior abdominal wall and which had not been recognized during life.

In addition to the five cases which we have reported in more or less detail, we have had four other patients that underwent bilateral prefrontal lobotomy for intractable pain.

Case 6.—One man, aged thirty-three, had bilateral prefrontal lobotomy because of the excruciating pain of diabetic neuritis. This man had lost his vision because of diabetic retinitis and, as a result, attempted to take his life by slashing his wrist. This patient's diabetes could not be controlled, and he died several weeks after operation. It is questionable if anything worth while was accomplished for him.

Case 7.—A man, aged fifty-five, who had experienced a cerebrovascular accident and who was troubled with severe and disabling headache underwent prefrontal lobotomy for the headache because his wife and daughter felt that he would commit suicide if no treatment were given. After the operation, he was much happier and had little distress, but he became difficult to handle. He became definitely antagonistic and abusive; this condition was present prior to his coming to the clinic, but we had not known of it. He was relieved completely of his headache after the operation.

Case 8.—A woman, aged seventy, had become incapacitated for her duties as a teacher because of pain in the anesthetic area of the right fifth cranial nerve and at the site of craniotomy for division of the posterior root of the trigeminal nerve for trigeminal neuralgia. The patient not only could not concentrate, but she was making life miserable for those people around her. Bilateral prefrontal lobotomy relieved her of pain; she then could smile and enjoy life whereas she had had the appearance of abject depression before operation.

Case 9.—A white woman, seventy-three years of age, with extensive and marked arteriosclerosis who was bedridden and addicted to the use of narcotics because of intractable bilateral sciatic pain secondary to spinal arthritis of many years' standing was completely relieved of her pain after bilateral prefrontal lobotomy. However, two weeks postoperatively and several days after she had been told she could leave the hospital, a thrombosis of the left middle cerebral artery developed and the patient died. This diagnosis was proved at postmortem examination. The subcortical incisions in the brain were in good condition.

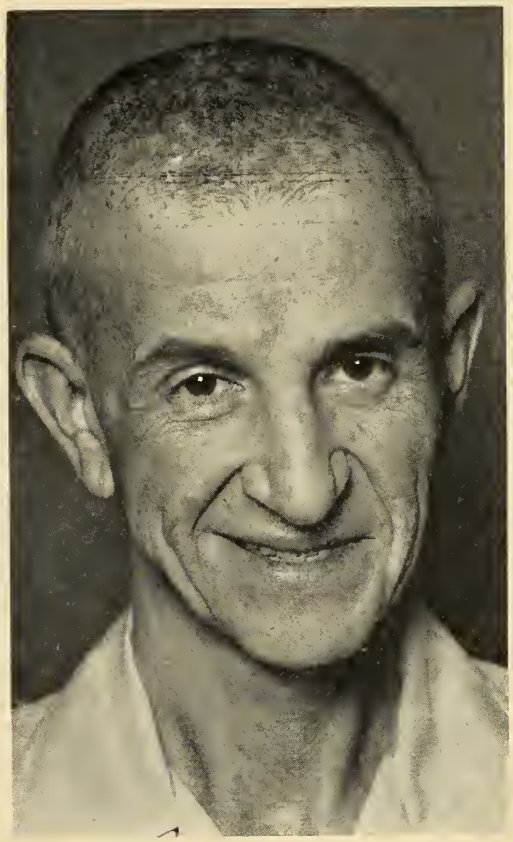


Fig. 3 (Case 4). Postoperative appearance. Remarkable change in facial expression has occurred after relief of the intractable pain. The lobotomy incisions are scarcely visible ten days after operation when this picture was made.

Summary and Conclusions

Nine patients suffering from intractable and uncontrollable pain in various parts of the body were subjected to bilateral prefrontal lobotomy. In four cases the pain was on an organic basis; in the remaining five cases, no organic cause could be found for the pain.

In six cases the relief of pain was remarkable and was considered satisfactory. The results in one patient with severe diabetes who succumbed to his illness cannot be adequately evaluated. One patient (Case 4) was completely relieved for a time, but he subsequently presented a behavior problem. The other patient was under observation in a mental hospital at this writing; the headache for which the operation had been performed was less troublesome, but he presented a problem in management.

(Continued on Page 157)

THE EMERGENT CARE OF CRANIO-CEREBRAL INJURIES

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FORTUNATELY, the majority of people who have suffered a head injury recover, regardless of the treatment instituted. On the other hand, there is a small group which will recover only by the evacuation of an intracranial clot, and another small group which will recover only because of the judicious use of a very few principles of general treatment.

Unfortunately, there is not yet a full and proper understanding of all the entities which go to make up the clinical picture of craniocerebral trauma. Our treatment in many instances is empirical. There has been, however, a great deal of experimental work performed in the last ten years which has aided in this proper understanding. Although the application of these experimental results is often difficult in the treatment of these cases, it will be well to mention briefly the more significant developments.

Experimental head injuries have given us a realization of the far-reaching effects of force transmitted to the brain. Gurdjian and Webster[4] show that certain changes take place. The most important of these are deformation of the skull (inbending and outbending), a sudden and momentary rise in intracranial pressure at the time of injury, mass movements of the brain, and injury to the brain by transmitted energy unassociated with increased intracranial pressure.

Denny-Brown and Russel[2] first showed the importance of acceleration and deceleration of the brain in the development of brain injury. Since then, there have been numerous studies showing the mechanism of coup and contrecoup damage, the effects of torsion and fractures of the skull. There is evidence that a fracture of the skull may have some positive value, in that some of the force is dispersed which might otherwise be transmitted to the brain.

The physiological basis of concussion is still under dispute. From a clinical point of view, the differentiation of pure concussion from actual brain damage would be of great value. Walker[9] gives evidence that pure cerebral concussion may be a sudden cerebral excitation (due to traumatic depolarization of the neuronal membrane) followed by a stage of depressed activity—so-called "extinction." This is similar to the state following epileptiform seizure, spontaneous or induced. He also states that unconsciousness lasting longer than fifteen to twenty minutes is probably associated with actual brain damage.

The role of brain edema is also, as yet, an unsettled question. From the evidence available, it is probable that patients do not die from brain edema alone. That there is a vasoparalysis following trauma, with slowing of the blood flow, associated with increased permeability of the vessels and a localized transudation of fluid is well demonstrated by Schenker and Evans.[7]

Windle[10] has shown that there was only a slight increase in the water content of the brain after concussion and that cellular changes were not due to this, but to the initial injury. Whether the increased pressure in the cranial cavity is due to actual edema or whether it be due to increased blood or spinal fluid content is not definitely known. At least one fact is quite well settled. Bragdon[1] has demonstrated that there is little justification for the routine use of dehydrating agents in head injuries, as the results are not only unpredictable but temporary. The consensus of present-day opinion supports him.

There is, however, some justification for the use of spinal fluid drainage in the reduction of increased intracranial pressure. This will be discussed at a later point.

When one considers that the brain shows great respiratory activity as evidenced by the low oxygen content of the venous blood, the importance of an adequate oxygen supply is self-evident. Although the oxygen content of the brain has been found unaltered after trauma except in contused areas, where it is low (Stone et al[8]), the brain cannot stand an oxygen deficit. "Whereas breathing of oxygen causes mild vasoconstriction, the addition of carbon monoxide to the inhaled mixture improves cerebral flow and postpones loss of consciousness" (Grennell and Hoff[3]).

The importance of glucose is evident, when one

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realizes that glucose is the substance of prime importance for cerebral oxidation. As there is no storage of glucose in the brain, its glucose needs must be met by the blood.

Diagnosis

If one realizes that aside from lacerations of the scalp and depressed fractures of the skull, the only entity which needs emergent care is a rapidly increasing intracranial hemorrhage, it becomes very evident that the recognition of this hemorrhage is the most important single feature in the early diagnosis of head injuries. Concussion, lacerations, contusions, and petechial hemorrhage of the brain, if present, are not amenable to any special treatment except supportive, and so-called edema may be somewhat affected by certain methods of treatment, but edema by itself is not an emergency.

Fortunately, the percentage of injuries which have surgical hematomas is small, but this is the group of cases in which there is not the slightest doubt that the proper surgical treatment will effect a favorable outcome.

Increased intracranial pressure is the one constant entity in intracranial hemorrhage. The recognition of increased intracranial pressure is therefore paramount.

There are four methods of determining the status of the pressure in the cranial vault:

(a) By observation of the patient.
(b) By observation of certain physiological signs.
(c) By spinal manometer readings.
(d) By eyeground examination.

Observation of the Patient.—There are few injuries in which repeated examinations are so necessary. An often quoted phrase is that "if they die within six or eight hours, nothing could have been accomplished anyway." This is a dangerous phrase, as many patients with extradural hemorrhages will die if not operated upon within the first six hours. In general, the symptoms of increasing pressure are increasing headache, occasional vomiting and increasing stupor. The last is the most important and the most difficult to evaluate. Frequently, patients are unconscious from the effects of concussion, contusion, or laceration of the brain. The depth of the stupor can be ascertained by the comparison of the response to a noxious stimulus (such as pressure behind the angle of the jaw, or supraorbital pressure at repeated intervals). A lessened response means a deeper grade of stupor. A lucid interval is by no means present in all cases of intracranial hemorrhage.

At the same time, evidence of localizing signs, such as paralysis, increased reflexes, positive Babinski signs, must be recognized.

Observation of Physiological Signs.—Normally, the intracranial pressure is slightly lower than the arterial pressure. If the intracranial pressure becomes greater than the arterial pressure, anemia of the brain develops. The anemic condition of the medulla stimulates the cardio-inhibitory center, which slows the heart beat, and at the same time the vasomotor center is stimulated so that there is a general vasoconstriction which raises the blood pressure, and thus cerebral circulation is re-established. Every case of rapidly increasing pressure will at some time show a high blood pressure and slow pulse unless, of course, there is shocking hemorrhage elsewhere. After a critical point, when the pressure in the skull is too great for this compensatory mechanism, there will be a fall in blood pressure and elevation of pulse with respiratory paralysis. Not infrequently, the stage of compensation may have occurred before examination by the physician. Blood pressure and pulse recordings should be made every fifteen to twenty minutes.

Spinal Manometer Readings.—Spinal puncture in the treatment of head injuries is a much discussed problem. There is no question but that intracranial pressure can be reduced temporarily by this means, but if an intracerebral clot is present, what is the use of drainage which will not avert the hemorrhage and may only cover up the important signs which lead us to the diagnosis? In the acute phase of the injury, we are interested only in determining whether there is a hematoma that must be evacuated. As a rule, the observation of the state of consciousness of the patient and the observation of the blood pressure and pulse will give us ample evidence in the acute extradural or subdural hemorrhage. Frequently, however, a patient fails to respond in twenty-four hours, the pulse and pressure and state of consciousness has varied little, and the

patient may be developing a slowly increasing clot or edema. It is in these instances that a spinal puncture is performed as a diagnostic and not a therapeutic measure. One should not do a spinal puncture without measuring the pressure by manometive means.

Eyeground Examination.—This last method of determining increased intracranial pressure is of least importance in the treatment of acute injuries. In the first place, it is several days before it appears, and it takes a practiced eye to determine early changes. However, when it is present, it is of great importance, and therefore frequent examinations should be made.

X-ray in the diagnosis is only important if a depressed fracture is suspected, or if an exploration for hemorrhage is contemplated. This latter is mentioned, because occasionally in cases with an extradural hemorrhage the bleeding occurs at the point where the fracture line crosses a main branch of the middle meningeal artery, and a trephine over that point may be all that is necessary for evacuating the clot, and controlling the bleeding point.

Encephalography and ventriculography are rarely, if ever, used in the diagnosis of acute injuries. It has a definite place, however, in the diagnosis of the late sequelae, such as late subdural hematoma, cysts, and brain atrophy.

Electro-encephalograms are not as yet practical; however, they will undoubtedly prove of value in that the persistence of abnormal findings may prognosticate future trouble.[5]

Treatment

If one could be assured that no surgical hematoma were present, the emergency care of trauma to the head in the majority of instances would be a matter of supportive treatment.

General Supportive Measures.—The relative importance of the cranial injury to other injuries that may be present is often difficult to determine. There is no condition more emergent than a rapidly increasing intracranial hemorrhage, except a shocking hemorrhage elsewhere or possibly a sucking wound of the chest. After the general state of the patient is determined and a plan of action for care of fractures, lacerations, and internal injuries is made, supportive and watchful care is carried out, with special attention to changes in blood pressure, pulse, depth of stupor, and neurological changes.

An adequate airway is of paramount importance, as the effects of an oxygen deficit in the brain are far reaching. The removal of orotracheal and bronchial secretions in a patient who has lost his cough reflex is vitally important. An intratracheal tube or even a tracheotomy may be in order in selected patients. A strict order for nothing by mouth until the patient is well awake will lessen the chance of the all too frequent aspiration pneumonia.

Adequate nutrition is essential. So much attention has been paid to dehydrating agents that harm is done by overzealous efforts in this regard. As a rule, little attention is given to the administration of fluids in the first twenty-four hours. After this, at least 2,000 c.c. of fluid is administered, and if the patient fails to respond by seventy-two hours, sufficient caloric intake and fluid, either by gastric tube or parenterally, is given to assure adequate nutrition.

Care of Individual Entities.—

(1) Scalp wounds.—The only comment necessary is that an infected scalp wound is a serious defeat for the attending surgeon.

(2) Depressed fracture.—As a rule all depressed fractures should be elevated. Except where the dura has been punctured the elevation of a depressed fracture is not an emergent procedure.

(3) Intracranial hemorrhage.—A trephine over the point where the fracture line crosses a large branch of the middle meningeal artery on the suspected side may reveal not only the hemorrhage but the point of bleeding. The clot is sucked away, and a clip or silk suture closes the artery. If the bleeding persists from another point, as much bone may be rongeured away as necessary. Cranial defects can always be repaired.

If the clot is subdural, it is sucked away and the area washed with warm saline until bleeding is controlled.

If there is doubt in regard to the control of bleeding, a drain can be inserted, the wound closed, and then the patient can be transported or neurosurgical consultation be obtained.

The rapidity of onset of extradural hemorrhages and acute subdural hemorrhages often make neurosurgical consultation impossible and in

these instances a life-saving trephine must be made by the general surgeon of the community.

The late subdural hematoma does not come in the province of emergency surgery, and inasmuch as it often requires extensive craniotomies, it should be taken care of by one specially trained.

Brain Swelling—Edema.—That there is a moderate increase in intracranial pressure after trauma is evident. Whether this is due to actual tissue edema or increased cerebrospinal fluid or blood is still debatable, as evidenced by those schools which advocate extreme dehydration, no dehydration, frequent spinal punctures, and no spinal punctures.

It is well to remember that patients do not die from this cause alone.

It has been shown that there are no hypertonic solutions which give more than a temporary decrease of intracranial pressure.

Munro[6] has been the persistent advocate of repeated spinal punctures. It is of value if one is assured that there is no surgical hematoma whose presence will be masked by the repeated lowering of spinal fluid pressure. Its use should be limited to the patient who has not shown any of the physiological signs of intracranial pressure or localizing signs of a hematoma and who has failed to respond in the first twenty-four hours, and in whom the spinal fluid pressure is elevated. A spinal puncture every six to twelve hours may be indicated. Enough fluid is removed to bring the pressure to normal.

The danger of masking a subdural hematoma by this method cannot be overestimated. If the pressure remains over the upper limits of normal (usually over 200) after repeated punctures for three or four days and the patient fails to arouse from his stupor, multiple trephines must seriously be considered.

Posttraumatic Care

The care of the posttraumatic sequelae is not a part of this program. Suffice it to say that early ambulation and minimizing the effects of concussion, fracture of the skull, vertigo and headache will lessen the number of those cases which are so difficult to treat—the so-called posttraumatic neuroses.

Summary

The emergent care of head injuries is, as a rule, supportive, except when a rapidly increasing intracranial hemorrhage is present. The early diagnosis of this hemorrhage and its evacuation is by far the most important active role that the physician is called upon to play in these cases.

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PREFRONTAL LOBOTOMY

(Continued from Page 153)

It is our opinion that the operation of prefrontal lobotomy is justified and indicated in certain carefully selected patients who are suffering from intractable pain, whether of organic or functional type, when less radical measures fail to give relief.

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TOXEMIAS OF PREGNANCY

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THE TOXEMIAS of pregnancy have become one of the most important matters we handle in practicing obstetrics. As a group they occur in about 10 per cent of all pregnancies and are a major cause of maternal as well as fetal disaster. As a preface for this survey it may be well to discuss some pertinent statistics.

According to the latest United States Bureau of Census report, the toxemias constitute today some 26 per cent of all maternal deaths. In our own state we are doing better, not only on a total maternal mortality figure, but on the relative percentage of toxemias as well. And, more important, as the years go by, we are bettering ourselves. Remarkable strides have been made in Minnesota in bringing the maternal mortality rate of 5.8/1000 in 1924 to but 0.6/1000 in 1947. Obviously much of this gain, or increase salvage rate, has been due to the discovery and use of sulfonamides and antibiotics in combating puerperal infection, and to the more generous use of blood and plasma in the treatment of hemorrhage.

Our interest in this presentation centers around the toxemias: what we are doing and what can be done. Again from a statistical point of view, the percentage component of maternal deaths due to toxemia has, with the exception only of the last few years, shown little reduction from the figure of 22 per cent in 1922. Total deaths per year from toxemias have shown a steady decline. In a recent twelve-month survey by our State Board of Health, fifteen cases of maternal death from toxemia were carefully studied. Some interesting facts were disclosed. All but two of these deaths were preventable, either on the part of the physician, the patient, or both. Inadequate prenatal care, radical and unsuited methods of delivery, improper anesthesia, and faulty postpartum care were found contributing factors.

Considerable advances have been made even since 1942. In 1946 there were 67,303 live births in the state with sixty-nine deaths, giving a maternal mortality rate of 1/1000. In 1947 there were 75,467 deliveries with fewer deaths (only forty-seven), giving an extremely low rate of 0.6/1000 live births. Three toxemia deaths occurred in 1946 and only two deaths were attributed to this cause last year. In Renville County in 1946 there were eighty-nine deliveries with no maternal deaths, and in 1947 there were sixty-seven deliveries with no deaths.

From the foregoing it might almost seem that a discussion of toxemias is unneeded, particularly in Renville County. However, in view of the general importance of the disease group, I should like to present a brief discussion of the various toxemias, emphasizing in each the diagnosis and practical methods of treatment.

A uniform classification of the toxemias has been established by the American Committee on Maternal Health. It is the one we employ and probably the one which is most familiar:

Vomiting of Pregnancy (and Pernicious Vomiting)
Acute Yellow Atrophy
Hypertensive Disease
Renal Disease
Mild Pre-eclampsia
Severe Pre-eclampsia
Eclampsia
(Unclassified)
(Superimposed toxemias)

The occurrence of toxemias is unquestionably lessening. Ten years ago at the New York Lying-In Hospital it was approximately 10 per cent. Last year that figure was 5.43 per cent. Logical explanation, of course, can be given in improved prenatal care and diet; probably other, as yet unknown, factors also have contributed. The percentage of toxemias last year at the New York Lying-In Hospital was as follows:

	Per Cent
Pernicious Vomiting	0.0
Acute Yellow Atrophy	0.0
Hypertensive Disease	30.0
Renal Disease	2.0
Mild Pre-eclampsia	45.0
Severe Pre-eclampsia	20.0
Eclampsia	2.0
Unclassified	1.0

During the past decade there has been little change in this picture excepting that more of the formerly termed "nephritic toxemias" are now

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classified under "mild pre-eclampsia"; and that eclampsia has become less common, due evidently to better care of the pre-eclamptic patient.

Vomiting of Pregnancy

So-called "morning sickness" (and as often it is "afternoon sickness") occurs in at least 50 per cent of all pregnancies. Its development, when on a toxic basis, is limited almost entirely to the first trimester. It is the garden variety and nearly always benign. As such it should be distinguished from the rare but often malignant type, properly termed "pernicious vomiting of pregnancy" or "hyperemesis gravidarum."

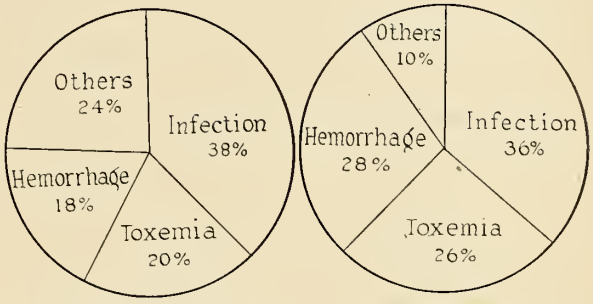
Three etiologic factors have been taught for the past forty years: (1) reflex; (2) neurotic; and (3) toxemia. Present-day concepts largely exclude the first of this list. There is still diversity of opinion, however, as to the importance of the second. While Stander, an authority in this field, believed that practically all are on a toxic basis, many of us practicing obstetrics believe the neurotic factor to be equally important. Disturbed metabolic processes and possibly also hormonal upsets would seem to play a part.

The well known symptoms are those of vomiting and its sequelae: dehydration, starvation, lassitude, polyneuritis and others. In pernicious vomiting these symptoms become very pronounced and may progress—at times most rapidly—to: coffee ground vomitus from gastric hemorrhage, marked dehydration, jaundice, coma, and even death.

Diagnosis of vomiting of pregnancy usually presents no problem, since it is largely confined to the first three months and nearly always responds to proper management. It is important, however, to differentiate this condition from other causes of vomiting in pregnancy, for example: gastric irritation from pressure of the gravid uterus, peptic ulcer, and diaphragmatic hernia.

Severe vomiting may even lead to death and consequently it is important to watch for evidence of the serious symptoms enumerated. A study of the eyegrounds in the pernicious vomiter shows at times variable degrees of hemorrhage. The blood chemistries may be altered with pulse and temperature elevation. Determination of urine acetone by the simple sodium nitroprusside test will point the need for close observation of all such patients with positive test. I personally find it helpful in deciding which patients are in need of hospitalization.

Recommended treatment is as follows: For those with mild symptoms, first eliminate fatty and highly seasoned foods, coffee, raw fruits, raw vegetables, and milk. I further recommend five rather than three meals a day; or snacks between meals, preferably crackers, toast or cookies.



U. S. Registration Area Minnesota

Primary Causes of Maternal Death

A mild sedative such as phenobarbital is usually prescribed. Along with such advice it is well to encourage the patient and reassure her that the condition is self-limited and will respond to treatment.

Where the condition is more than bothersome, the administration of large doses of thiamine and pyridoxine has been of decided help to many, but unfortunately not all, patients. Intravenous and intramuscular injection is definitely superior to the oral route. We recommend at least 50 mg. of each per injection, and do not hesitate repeating injections every few days if there is beneficial response. Several oral preparations are available, though vitamin potency is comparatively low. Occasionally the addition of parenteral ascorbic acid and liver extract will aid in response.

In those requiring hospitalization the following routine is suggested:

Until vomiting ceases:

Nothing by mouth for an additional twelve hours after vomiting ceases. Three thousand c.c. of 5 or 10 per cent glucose given parenterally each day, 2,000 c.c. of which to be glucose in saline.
Parenteral thiamine, pyridoxine and ascorbic acid.
Complete isolation from all visitors and relatives; single room; and strict bed rest.
Reassurance from the doctor and nurse.

After vomiting ceases:

1st day: Dry and frequent feedings consisting of toast, baked potatoes, crackers, etc.
Parenteral fluids.

2nd day: Same dry diet of five meals between which patient may have small amounts of tea and carbonated beverages.
3rd day: Full diet.
May be allowed up.

The unusually stubborn case will require more effective measures, including gastric lavage and subcutaneous fluids with long needles. For that rare case where serious pernicious vomiting occurs, it may be necessary to abort the patient to save her life. At the New York Lying-In Hospital in the past fourteen years only six such abortions were required of 59,000 obstetric patients seen.

Acute Yellow Atrophy

This rare toxemia is not exclusively one of pregnancy, or of women. It is characterized by jaundice, drowsiness, headache, vomiting, diarrhea, delirium or coma. It may occur at any time during pregnancy, and leads rapidly to death in many instances (30 per cent mortality). The picture is one of severe liver damage both from clinical and pathological viewpoints.

Etiology of the toxemia in some cases can be established on the basis of liver poisoning. In others no specific factor is known although there may be contributing circumstances such as syphilis, chronic passive congestion, and cirrhosis of the liver.

The disease is usually sudden in onset, quickly presenting jaundice, lethargy, markedly toxic symptoms and convulsions. At first the liver may be palpable and tender, then gradually shrinks in size. Albuminuria is present. Diagnosis is made on this clinical picture, history of poisoning, a high icteric index and a positive Van den Bergh test. It may be confused with toxic vomiting and eclampsia.

Treatment should be directed in a general way to combat the toxemia and specifically to support and aid the liver. The patient should be hospitalized and should receive 500 c.c. of 20 per cent glucose intravenously four times a day. Recent advances indicate the wisdom of administering intravenous amino acids to fortify the liver, and molar lactate solution in 500 c.c. amounts as needed to maintain acid-base equilibrium.

Hypertensive Disease

Hypertensive cardiovascular disease is not a true toxemia, but is so classified because it is often first recognized in pregnancy and may be confused with the pre-eclamptic, eclamptic toxemias, as well as with renal disease. According to Volhardt and Fahr two groups are found, benign and malignant. More recent workers have divided the condition into four classes. From a practical standpoint, however, it is important for us in the handling of an individual case, or cases, to be able to differentiate the non-progressive benign, from the progressive or malignant type.

A discussion of etiology as well as experimental work on this subject alone would be a major enterprise and is without the scope of this paper. Briefly, however, it may be said that the popular theory of renal ischemia liberating renin as an initiating factor of hypertension, is open to serious doubt. According to Goldring and Chassis, the fundamental factor is an increase in total effective peripheral resistance due at first to reversible arteriolar spasm; later the arteriolar changes become permanent. The renal ischemia noted in these patients appears, to these authors, to be the sequelae and not the cause of the hypertension.

Attention should be given to a careful recent study by Chesley and associates at the Margaret Hague Hospital in Jersey City. They found, and quite contrary to the generally stated opinion, that repeated pregnancies in hypertensive patients do not increase their expected annual death rate (which incidentally is unusually high anyway, i.e., six times the expected death rate of normal women!) They also discovered that where pre-eclampsia is superimposed on the hypertensive patient, the maternal death rate increases the patient's risk tenfold.

Hypertensive disease may, of course, precede the pregnancy or first become manifest during pregnancy. A history of previous hypertension is often elicited and is very helpful in establishing the diagnosis. As a so-called toxemia, it is not limited to any one period of gestation, but will likely be present by the second if not the first trimester. Its symptoms are well known. Blood pressure values are often in the neighborhood of 150-160/90-100; but may be considerably higher. There is little or no accompanying edema and urine tests are clear for protein. If further diagnostic work is required, renal function tests will show normal values, except in the far advanced cases with secondary renal involvement. Blood chemistries will likewise be normal. In this toxemia considerable help will be

found in ophthalmoscopic eyeground studies, where even early hypertension will evidence some arteriolar spasm. Later in the disease, permanent vascular changes are seen. Hallum reported that, "The degree of eyeground changes more closely follows the severity of hypertension and consequently the toxemia than any other sign."

Treatment is largely that of medical management of the non-pregnant hypertensive patient. The general tried and true measures are the best, namely; rest, sedation, restriction of activity, and a quiet well regulated life. Thiocyanate treatment in pregnancy has been without much success. Surgical procedures are not advisable during pregnancy, but may be considered postpartum.

Concerning the problem of obstetric management of the hypertensive patient, she must be observed more frequently and more critically throughout pregnancy. At times hospitalized rest may be required. Sedation should be generously given during labor, yet not to retard or prolong it. Delivery by forceps is desirable as soon as full dilatation of the cervix is reached to prevent the extra effort of the second stage. Anesthetic of choice is local pudendal block type.

One may be faced with a decision as to interruption of the pregnancy. Hypertensive disease alone is not enough. However, if there is evidence indicative of severe hypertension then one may justifiably recommend termination. Certainly with impending pre-eclampsia such indication is undisputed.

Renal Disease

Formerly termed "nephritic toxemia," it is in many respects like the hypertensive disease and not really toxemia at all. Renal disease complicating pregnancy is commonly grouped herein because of many similarities with the "true toxemias." It is a heterogenous composite of three divisions: (1) glomerulonephritis; (2) renal arteriolosclerosis, and (3) tubular nephrosis. The background of each of these is different and is well known. From a practical standpoint, the majority of obstetric patients with renal disease fall into the arteriolosclerotic or nephrosclerotic type. As with hypertensive disease, history of previous renal disease may help to point to the diagnosis. It may occur in either the first, second, or third trimester. It usually begins insidiously with albuminaria, not much else. The urine will often contain casts as well. Sooner or later, hypertension will be present. Edema may become marked, particularly with the nephrotic types. Symptoms are those of lassitude, headache, dizziness and visual disturbances. When the disease is mild the patient may not present any symptoms, but the one important lead is albuminuria. And this, incidentally, should always be differentiated from that of pyeloureteritis by microscopic study. In the severe types, urine output falls and with it there is retention of nitrogenous products and symptoms of uremia.

Where the story and office findings are not conclusive, it is important in view of the bad prognosis to hospitalize the patient for renal function tests. While inulin and diodrast clearance tests are more sensitive, the old standbys, concentration and dilution, P.S.P. tests, blood urea nitrogen and blood uric acid, will prove reliable in differentiating this condition from the so-called "true toxemias." Of further aid is the use of the ophthalmoscope, finding in established cases of renal disease the retinal hemorrhages and old areas of fibrosis and scar.

The prognosis of renal disease is bad; both the maternal mortality rate and fetal mortality rate are high. There may be intrauterine fetal death or premature delivery. Explanation has been given in the frequent large placental "infarcts" supposedly restricting nutrition and oxygen to the fetus. However, other unknown toxic factors seemingly play a role.

Treatment is in the main the medical treatment of renal disease *per se,* with restriction of fluids and salt plus the use of mercurial diuretics in the severely ill patient. For those in whom the disease is not far advanced and without uremia, there is a trend today toward a moderate fluid intake and no restriction of protein with but moderate limitation of salt. As in the treatment of the hypertensive patient, of equal importance is the well managed orderly life.

From the obstetrician's consideration, since the prognosis is poor for both mother and child, one should not hesitate in terminating the pregnancy at any time in the more serious chronic nephritic patient. Where allowed to continue, obstetric management is essentially the same as stated under hypertensive disease. Under certain circumstances, cesarean section before term when the fetus is viable may be performed in the interest of the baby in view of the high intrauterine

death rate. Postpartum sterilization should be wisely considered.

Mild Pre-Eclampsia

This toxemia, formerly called "low reserve kidney," is the mildest form of the true toxemias and the most common. It is characterized by a mild rise in blood pressure up to 160/100, slight albuminuria, slight edema, and abnormal gain in weight. The toxemia is limited to the third trimester. Its symptoms are correspondingly mild or absent. Its beginning is typically mild with perhaps a trace of albumin and a blood pressure rise often not even beyond the normal limit of 140/90. There may or may not be significant weight increase and edema. One week later these same findings will again be present and may be no different—but more probably all will be a little more prominent. There is usually no antecedent history of toxemia and this is most often the first pregnancy. Also, in contrast with the hypertensive toxemia, the patient is more likely a young woman of late teens or early twenties. If further diagnostic measures are needed, the blood chemistries as well as renal function tests and eyeground findings will all be found within normal limits.

If the symptoms are mild and present for the first time, it is generally safe to permit the patient to follow out a toxemia regime at home, and to see her again in one week. Such suggested management is as follows:

Rest. No outside activity, no walks, no trips to the store, no company. One hour bed rest in the morning and one or two hours bed rest in the afternoon.

Sedation. Phenobarbital, one-half grain, twice or three times a day. Restriction of salt, limiting to one-half the usual amount. Limitation of fluids if there is edema to one and one-half quarts a day. Saline cathartic, for example Epsom Salts, one tablespoon in one-half glass water before breakfast once or twice a week.

The use of the low protein diet is gradually being abandoned in favor of a normal or even high protein intake. There is more logic in the latter and no adverse effect on the toxemia. The patient is advised to call in at any time if she has: headaches, epigastric pain, spots before the eyes, or increased swelling. Where mild pre-eclampsia does not respond to these measures, strict bed rest in a hospital and stringent adherence to these rules should be carried out. Regarding the prognosis, it may be reasonable to expect at least 40 to 50 per cent improvement by such management. Fortunately many patients exhibiting pre-eclampsia will go into labor early or following a temporary improvement in status.

Severe Pre-eclampsia

This disease is serious in that it is so frequently the percursor of eclampsia. It is usually of sudden onset, occasionally being preceded by mild pre-eclampsia. Only infrequently will there be history of previous toxemia. It is found in the third trimester, often in primigravid young adult women. It is characterized by high blood pressure, around 180-200/110-130, with a correspondingly high amount of albumin in the urine. Specimens may contain as much as 3 to 4 plus, i.e. up to 10 Gm. per liter, of albumin; edema may be marked or absent. The patient need have no complaints, but usually has a peculiar "sick feeling," with headaches or epigastric pain and may have visual disturbances. Urine output is diminished, but there is no increase of blood urea nitrogen; only the blood uric acid rises. Eyeground studies only occasionally show spasm and retinal edema. Kidney function tests are usually unaltered. Such a story and record serve to indicate the diagnosis, while follow-up studies and postpartum response should confirm it.

The immediate prognosis for the mother is unquestionably hazardous in that eclampsia often follows. The fetal mortality rate in severe pre-eclampsia alone is 20 per cent. The ultimate prognosis for the mother finds approximately 20 per cent having recurrences of toxemia in subsequent pregnancies.

Proper and prompt treatment of mild pre-eclampsia and good prenatal care, good health and diet are important in prevention of severe pre-eclampsia. Once the latter exists, hospital care is mandatory. The patient should be placed in a single dark room and disturbance kept at a minimum. Sedation should be started with morphine, grains one-fourth, and repeated in four hours. This should be supplemented with chloral hydrate or barbiturate every six hours. By giving 500 c.c. of 20 per cent glucose in water intravenously four times a day, diuresis will be stimulated. Acidosis if present can be combated with intravenous molar lactate solution in 500 c.c. amounts. Oxygen should be available as well as a tongue blade mouth gag in the event of convul-

sions. Diet should be soft, low in salt, with oral fluids restricted to 1,500 c.c. a day, if edema is present.

If response is not forthcoming in forty-eight hours under such a regime, non-traumatic delivery is advised. Usually this means Cesarean section under local anesthesia. However, in some instances, if the patient be a multipara and at term with a partially dilated and effaced cervix, medical induction with rupture of membranes may be better suited. Delivery then, as in spontaneously initiated labor, should be by forceps at full dilatation of the cervix. The preferred choice is local anesthetic, inasmuch as all inhalation gases may be further toxic to the liver.

It must be remembered that not infrequently intrauterine death of the fetus will occur—before, during, or after the start of such treatment. Often this development is followed by spontaneous improvement in the toxemia.

Eclampsia

This dread toxemia is gradually becoming a rare entity. About 25 per cent of cases occur before labor, 50 per cent during labor, and 25 per cent postpartum. Some of the latter group we have recently shown to occur as late as the eighth postpartum day. Essentially eclampsia is the same as severe pre-eclampsia with superimposed convulsions. The background is the same as well as the characteristics and diagnostic features.

The etiology of eclampsia still remains obscure. It is the disease of many theories and there is little to be gained by a detailed discussion of them. However, some important facts and recent developments which seem on the verge of finally explaining the disease process, merit attention. They are in brief outline:

1. Primiparity, twins, and hydramnios definitely predispose to pre-eclampsia and eclampsia.

2. Eclampsia is higher in undernourished, "ill fed, ill clothed, and ill housed."

3. Renal ischemia does not play a role in pre-eclampsia or eclampsia. And renal blood flow is unchanged in the true toxemias.

4. Dexter and Weiss attribute the cause of the toxemia to "something within the placenta"; and not to the fetus or the mother.

5. Smith and Smith state on the basis of preliminary studies, that pre-eclampsia and eclampsia are due to a menstrual-like toxin present in the blood of such patients. The toxin is derived presumably from the placenta or is of decidual origin; it does not occur in the normal parturient patient.

The prognosis of eclampsia properly treated today is now well under a 5 per cent maternal mortality. The fetal mortality rate, however, is still high, 40-50 per cent. Eclampsia will recur in subsequent pregnancies in about 4 per cent of cases; but other toxemias will occur in 35 per cent. In general, the immediate prognosis is worse in antepartum and intrapartum eclampsia, in the presence of prolonged coma, a high pulse rate, a high blood pressure, high fever, more than ten convulsions, more than ten grams of albumin per liter of urine, and absence of edema.

In the main, good treatment of pre-eclampsia is good prevention of eclampsia. However, an occasional case will fulminate so rapidly through pre-eclampsia to eclampsia that little can be done in the way of prophylaxis. Unquestionably the best treatment of eclampsia is a conservative one. Stroganoff management, introduced in 1924, has already been detailed. It should be modified as mentioned with addition of hypertonic glucose every six hours plus molar lactate solution to combat acidosis. Veratrum veride has again shown some popularity although it has been combined with other sedative drugs and its beneficial action disputed.

Usually, labor supervenes in the antepartum patient; but on selected occasions, induction of labor and/or operative delivery, including cesarean section, may be necessitated.

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COMMON ERRORS IN RH TESTING

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ERRORS in Rh testing have led to many instances of severe transfusion reactions and even to fatalities. Equally as tragic is the sensitization of Rh-negative girls and women in the child-bearing age by transfusions because of erroneous classification with respect to the Rh factor. Such sensitization may jeopardize future pregnancies, giving rise to congenital hemolytic disease of the newborn (erythroblastosis fetalis) and may even destroy the woman's chance to have one normal infant (cf. Case 1). Since such mistakes are largely preventable, it is imperative that the causes be discovered and eliminated where possible. It is our purpose to explain some of the more common errors and to suggest means to eliminate them.

Faulty technique, the use of serum of low antibody content, the use of old serum or serum that has not been properly handled, and attempting to test old blood specimens are some of the major factors responsible for inaccuracy in Rh testing, i.e., the determination of Rh status.

It is of utmost importance that the proper type of antiserum be used for the particular method employed. When testing by the slide method of Diamond and Abelson,[1] only antisera containing blocking (univalent) antibodies can be used and all crystalloids must be eliminated from the system. The vial of testing material should state: "For the Slide Test Technique." Any other sera should not be used for this test. For tube testing, antisera containing either blocking antibodies or agglutinins (bivalent) antibodies or both, may be used. Regardless of the method employed, the proper conditions of temperature and time must be observed for that particular method. For example, when performing Rh tests by the tube technique, the tubes must be incubated at 37° C. for one hour before they are read. Thereafter, they may be read with or without centrifugation.

A frequent source of error has been the antiserum itself. Testing sera of animal origin will react with the red blood cells of all newborn infants to give a positive test regardless of Rh status. Many such sera will also give results on other erythrocytes that cannot be constantly reproduced. Hence human, rather than animal sera should be used. Moreover, various lots of antisera even from the same source vary in speed of reaction, specificity and degree of agglutination produced. Much of this is determined by the antibody titer. Antisera with a low titer may fail to agglutinate cells containing agglutinogens which are "weak" or incomplete. Therefore, it is essential that each new lot of testing material be checked against known Rh-positive cells, preferably of several Rh types. The National Institute of Health has established a titer of 32 as a minimum acceptable standard.

Antisera will lose their effectiveness rapidly at room temperature and more slowly if refrigerated. Hence, they should be checked from time to time against known cells and replaced if agglutination is weak or delayed. This check will become routine if known Rh-positive and Rh-negative cells are included as controls in each series of unknown cells tested.

Samples of blood to be tested lose their ability to react even with potent antisera when hemolysis occurs. Hemolysis proceeds rapidly at room temperatures and more slowly at icebox temperature. Fresh specimens are preferable, but when they cannot be tested immediately, they should be refrigerated and checked as soon as possible. Perfectly dry syringes, needles and receptacles should be used. Chemical anticoagulants should be avoided.

Occasionally errors have resulted from rouleaux formation. In some instances, it may be extremely difficult to distinguish between rouleaux and true agglutination. Frequently, the addition of a drop of the appropriate diluent will help in this differentiation since it will break up rouleaux aggregates but will not affect agglutinates.

In the slide technique, two additional sources of error may arise. False positive reactions may result from drying and false negative results may occur when the suspension of test cells used is

From the Department of Obstetrics and Gynecology, University of Minnesota Medical School.
Read at the semiannual meeting of the Minnesota Society of Obstetrics and Gynecology, November 7, 1947.

not concentrated enough. To prevent incorrect results from drying, the test should be read at the end of one minute, and if an unusual amount of drying has occurred at this time, the test should be repeated. False negative reactions may be prevented by using cell suspensions which are approximately of 35 to 50 per cent concentration.

It is not within the scope of this presentation to include the more technical aspects of this problem but several instances may serve to stress the necessity for the elimination of all possible errors.

Case Reports

Case 1.—Mrs. F. W., aged twenty-six, was first hospitalized in 1942 with severe abdominal pain, vaginal bleeding and symptoms of shock after an amenorrhea of six weeks. She had never previously been pregnant. A diagnosis of a ruptured ectopic pregnancy was made and confirmed at laparotomy. She was given 1,000 c.c. of type-specific Rh-positive blood and made an uneventful recovery. She again became pregnant in 1945 and delivered a severely edematous, erythroblastotic infant at term. The infant was stillborn. Check of her Rh status disclosed that she was Rh negative instead of Rh positive as had been reported previously. The cause of the erroneous determination could not be discovered. The maternal serum contained Rh antibodies in a titer of 1:512 in saline and of 1:1024 in bovine albumin. She again became pregnant in 1946 and again delivered an edematous stillborn infant near term.

In this instance, despite the fact that the husband is Rh positive, sensitization was most likely produced by the large transfusion of Rh-positive blood in 1942, at the time of her operation, as the result of faulty Rh determination. Her prospects for having a child of her own in the future are not good.

Case 2.—Blood from Mrs. K. J., twenty-two years of age, was sent to our laboratory for determination of Rh status because two other sources had reported contradictory results. A test made in the physician's office had shown the patient to be Rh negative whereas she had been classified previously as Rh positive by a hospital laboratory. When the patient was found to be Rh positive, investigation disclosed that the testing serum used in the doctor's office was more than six months old because only occasional tests were done there. Even though it had been refrigerated during this time, an antibody titration revealed a residual titer of 1:2, but only weak agglutination of known Rh-positive cells was produced even with the undiluted serum.

Case 3.—Mrs. E. M., aged twenty-eight, had been tested for the Rh factor during her prenatal period and was said to be Rh positive. Two previous pregnancies and deliveries had not been unusual in any respect, and the children were alive and well. After an uneventful antepartum course, she spontaneously delivered a normal 8-pound male infant. The placenta was retained and had to be removed manually. This procedure was accompanied by a blood loss estimated to be 450 c.c. A transfusion was ordered, and in rechecking the patient's Rh status, she was found to be Rh negative. Investigation disclosed that the laboratory which had performed the original test routinely used anti-Rh_0', or so-called 87 per cent serum. When the patient's cells were typed, she was found to belong to type Rh'. Although the incidence of this type is only 1 per cent among Caucasians,[3] it is possible for such individuals to be sensitized by either the Rh_0 or Rh" antigens or both. Stilwell[2] has recently pointed out that persons who have blood which is classified in any of the groups, Rh negative, Rh', Rh" and Rh'Rh" should all be considered as Rh negative when they are to be recipients of blood or in obstetrical problems concerned with the Rh factor. However, blood classified as type Rh', Rh" or Rh'Rh" must be considered as Rh positive when it is to be used as donor blood. Had the original testing been accepted as correct and Rh-positive blood been given to this patient, it might have sensitized her to the Rh factor. This in turn might have led to later transfusion reactions or to erythroblastosis fetalis in future pregnancies

Comment

Unfortunately, most laboratory reports are accepted as correct and are seldom questioned. To eliminate this, it would be advisable to check all Rh tests by several methods or have the tests performed by different laboratories. In this way, sources of error may be discovered and eliminated before tragedy ensues.

Summary

Several of the more common sources of error in Rh testing have been emphasized and means suggested for eliminating them. Illustrative cases are reported demonstrating the necessity for eradication of all possible errors.

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A NEW AND SATISFACTORY OPERATION FOR PROCIDENTIA

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UTERINE prolapse has plagued the lives of many women in the past, and today is still one of their major complaints. The laity has considered it a natural result of childbearing and advancing years, and the fact that the prescribed remedies are frequently unsatisfactory has led some patients to refuse treatment.

The treatment of uterine prolapse is still a controversial subject among gynecologists.[4] Certain practitioners, mindful of the failures in this field of surgery, are loath to advise or perform a surgical operation, but employ some make-shift support or pessary, endeavoring to minimize the discomfort of the patient. The many different operations that have been devised for uterine prolapse indicate that the profession has not yet arrived at the solution of this problem.

Physicians who would give advice in this field should thoroughly understand what forces govern and maintain the uterus in its normal relationship to other pelvic and abdominal organs. The initial stages of a prolapse are often unrecognized. Usually a woman with a procidentia has had the supportive structures damaged during childbirth, but there may be a complete prolapse in the nullipara.

In this paper I wish to emphasize and especially consider prolapse of the uterus of the third degree, or procidentia, realizing, however, that it is inseparable from the consideration of prolapse of the first or second degree.

Normal Supports of the Uterus

The structures and forces which maintain the uterus in its normal position are as follows:

1. The uterosacral ligaments prevent the cervical portion of the uterus from dropping and hold it backward.
2. The round ligaments hold the fundus forward. The uterosacral ligaments and round ligaments together hold the uterus at right angles to the vagina.
3. The broad or cardinal ligaments maintain the uterus at its normal level.
4. The pubo-vesico-cervical fascia and
5. The recto-vaginal fascia encase and hold up the vagina, as well as help to support the bladder and rectum.
6. The perineal and levator ani muscles form the floor upon which the fascia surrounding the vagina rests.
7. The intra-abdominal pressure, when the uterus is in normal position, helps to maintain the uterus at right angles to the vagina.

Causes of Prolapse

It is evident that any of the following conditions may favor a prolapse:

1. Congenital weakness of the normal supports.
2. Certain occupations that require women to be on their feet much of the time.
3. Bad postural habits, causing visceroptosis.
4. Tumors within the abdomen or growths pressing upon the uterus.
5. A subinvoluted uterus or one heavy from inflammation.
6. Gastrointestinal disturbances with much gas formation.
7. Damage to supportive ligaments, muscles, or fascia, from childbirth.

The degree of prolapse depends upon one or more of the above named factors, the time element, and the amount of damage to the supports. In the first and second stage of prolapse, the uterus becomes retrodisplaced and the intra-abdominal pressure is then exerted upon the anterior surface of the uterus, stretching the uterosacral and round ligaments and forcing the uterus to a lower degree.[2]

The primary stages of prolapse may be present before the menopause, but after the menopause, the uterus becomes atrophied and is more easily forced downward.

Symptoms

In the early stages of prolapse, the symptoms are usually mild, and may not be recognized. By examining the patient in a standing position, a beginning prolapse may be detected more easily. Later on, the symptoms are those of pressure, fullness, and some disturbances of the bladder or bowel functions.

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In the third degree prolapse, the uterus can be forced outside the vaginal canal by straining, or it may protrude between the patient's thighs when in an erect position. The bladder is dragged down with the uterus and vagina forming a cystocele or a pocket back and below the pubis, causing retention of urine, frequency, and often incontinence.[5]

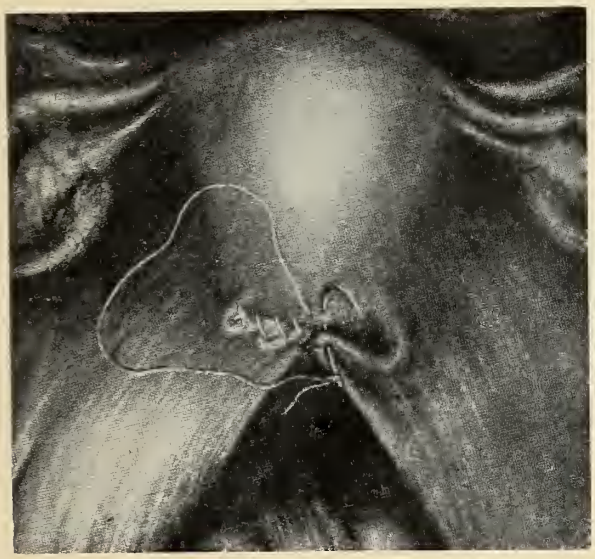


Fig. 1. Shortening the uterosacral ligaments in certain types of displacement.

Treatment

Treatment should be preventive, general and systemic, or operative. It would seem advisable that every woman of marriageable age should have a thorough pelvic examination in order to determine if there are any pelvic or abdominal factors that might lead to future prolapse of the uterus, so that preventive measures may be taken to obviate that possibility. These measures may include a change of occupation, diet, exercise, physiotherapy treatments, or possibly an operation.

An occupation that requires the woman to be on her feet much of the time or in a cramped or stooped position may favor the production of a procidentia.

The uterosacral and the round ligaments are important structures in maintaining the uterus in the normal antiflexed position, but if these structures are stretched or inadequate in their support, the uterus begins to assume an upright or retroflexed position. The intra-abdominal pressure then becomes a menace and an additional force, crowding the uterus downward. Therefore, it is necessary that an early operation be performed to shorten the uterosacral and round ligaments[1] (Figs. 1 and 2).

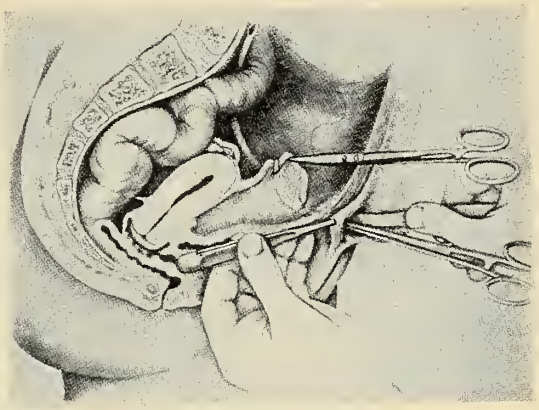


Fig. 2. Author's method of shortening the round ligaments for retro-displacement and moderate prolapse.

It is obvious that women who have borne children should be examined occasionally to note any tendency toward a prolapse. All lacerations should be repaired. I am convinced that there would be few cases of prolapse that would reach the third stage if all the safeguards heretofore mentioned were instituted. Nevertheless, we do see, and will continue to see, women in whom the third stage has been reached. It is in these women that we see the greatest distress, and the greater number of failures from operations. The problem then is: what are the remedies?

Usually these women have either reached the menopause or are not likely to have more children. Some operation that promises the best results without interfering with the function of any of the tissues or organs of the pelvis is desirable.

McKelvey[3] has suggested irradiation in certain cases. The sclerosing effect on the vaginal and other tissues of the female pelvis of married women would be an obvious objection and inadvisable.

The Baldy-Webster operation does not elevate the bladder sufficiently. The Gilliam operation is not applicable in these severe cases of prolapse of the uterus for the same reasons. The Watkins interposition operation is useful in some cases, but the uterus only acts as a plug to prevent the dropping of the bladder and does not act as an auxiliary support for the vagina. Patients still complain of a heaviness and fullness in the pelvis. After the menopause, the uterus is so atro-

phied that the results are poor, as the intra-abdominal pressure may force the small uterus with the bladder downward. Furthermore, in case malignancy should later occur, the removal of the uterus would be difficult and hazardous and less successful.

In a vaginal or abdominal pan-hysterectomy it is difficult to bring enough supportive structure together in a manner to adequately support a prolapsing bladder. Much scar tissue may develop that will stretch subsequently. About 30 per cent of patients so treated have trouble thereafter.

I have endeavored to develop an operation which augments all the natural supports of the uterus, and which seems to give more positive results than any other operation which has been used up to this time.

The operation is applicable to the following type of cases:

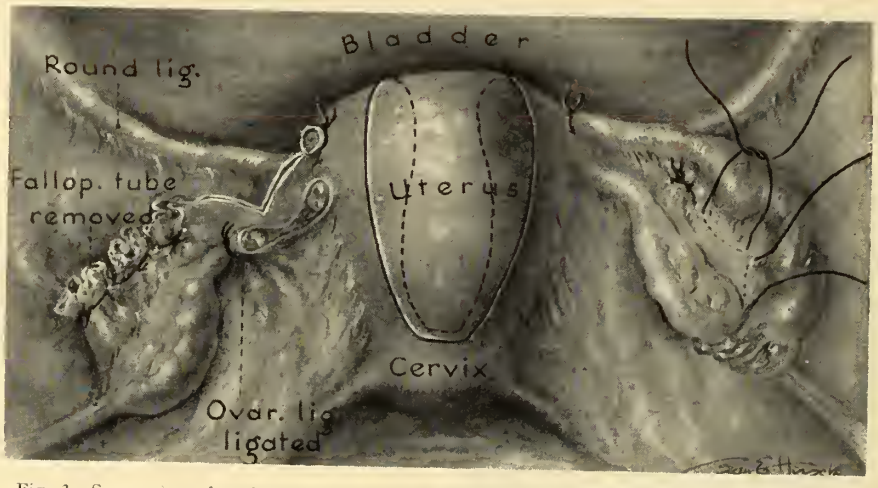


Fig. 3. Suspension of prolapsed uterus. Preparation of lateral uterine flaps. Semi-schematic.

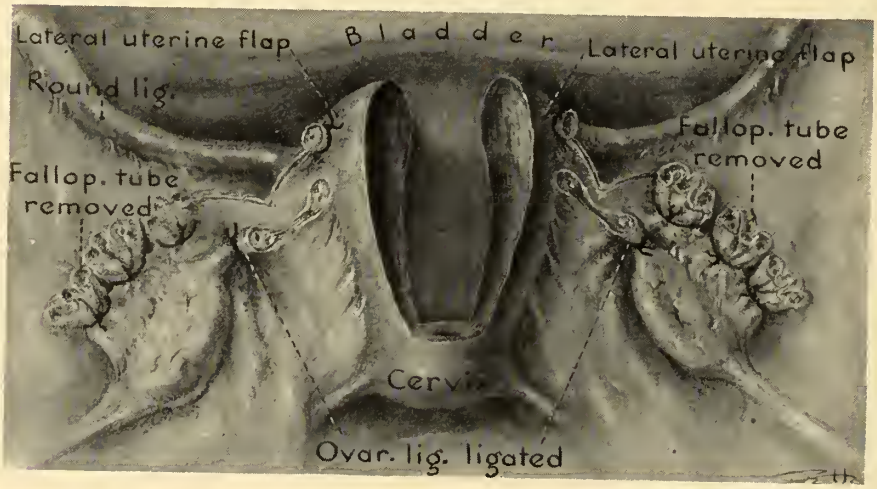


Fig. 4. Suspension of prolapsed uterus. Lateral uterine flaps after removal of body of uterus. Semi-schematic.

1. In cases of sterility.
2. In cases where no more children should be borne.
3. In nonmalignant cases.
4. In uterine prolapse with fibroids.
5. In women past the climacteric.

Operative Procedure

This operation first takes into consideration the repair of all the damage resulting from childbirth and the consideration of any intra-abdominal force that is instrumental in bringing about a prociden-

tia. It may be necessary to repair a perineum, amputate a cervix, cone out the mucous membrane of the cervical canal, and repair the anterior and posterior vaginal walls.

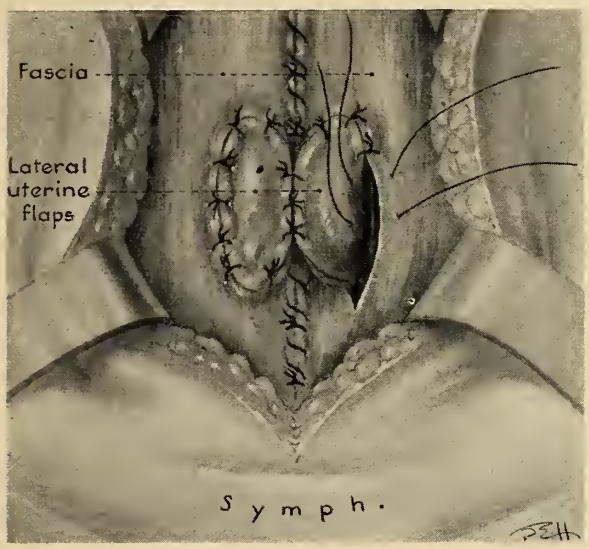


Fig. 5. Suspension of prolapsed uterus. Lateral uterine flaps anchored to external fascia.

A pelvic laparotomy is then performed to correct any abnormality within the pelvis. The tubes are removed and the ovaries separated from the uterus but not removed unless diseased. The midportion of the fundus of the uterus is excised, leaving the lateral portions (Figs. 3, 4, 5, and 6).

The mucous membrane of the canal is either coned out or cauterized. The lateral flaps of the uterus, together with the round ligaments, are then pulled through a slit in the lower abdominal muscles and fascia on each side above the pubis and 1.25 inches from the midline incision. These flaps are anchored at their exit through the fascia. The remaining portion of the cervix is then stitched to the perintoneum in the lower angle of the wound.

The abdominal incision is closed in the usual manner except for the skin. The lateral flaps coming through the fascia are folded over the fascia to the midline with the raw surfaces resting on the fascia and are there anchored. The skin is then closed over the flaps. This gives a firm positive additional support for the uterus and vagina, and elevates the bladder. There is no scar tissue to stretch, and the desired relief is obtained.

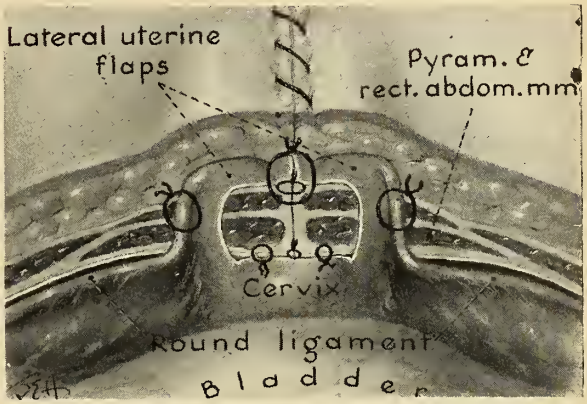


Fig. 6. Suspension of prolapsed uterus. Schematic cross-section of completed operation.

Conclusions

1. The laity, as well as the profession, has not always been satisfied with the treatment of uterine procidentia.
2. Too little attention has been given to the initial stages of uterine prolapse.
3. If the early symptoms were recognized and proper remedies applied, many subsequent cases of procidentia could be prevented.
4. In certain cases it is necessary to supply additional support to the restored normal ones.
5. In such cases the author has been satisfied with the operation which he has herein described.
6. This operation conserves all the necessary normal tissue and supports, and preserves the function of the vagina.
7. It permanently supports the uterus and bladder and gives satisfactory results.

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PHEOCHROMOCYTOMA OF THE ADRENAL WITH SUCCESSFUL REMOVAL

Report of a Case

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THE DIAGNOSIS of pheochromocytoma of the adrenal gland with subsequent operative removal has been reported with increasing frequency in recent literature. To date there have been approximately 70 such cases reported. Many excellent reviews of the subject have appeared, the most recent by Burrage and Halstad,[8] and Ganem and Cahill.[14]

The following case is presented as a typical example of the syndrome of paroxysmal hypertension associated with an adrenal tumor, and demonstrates the accuracy of certain diagnostic procedures.

Case Report

J. A., a man, aged twenty-seven, was admitted to the Minneapolis Veterans Hospital on April 1, 1948, complaining of weakness, flushed sensation, palpitation, headache, and nervousness occurring in sudden attacks since 1943.

In June 1943, while overseas in the South Pacific, he began to complain of these episodes. When seen by medical officers, the only positive physical finding was mild elevation of the blood pressure. On one occasion in January 1944, however, his blood pressure was found to be 225 mm. of mercury systolic and 140 mm. diastolic during an attack. He was hospitalized at this time, but returned to duty after 2 weeks when no further attacks occurred. Digitalis was given for 8 days following one episode without appreciable effect. At another time he was given iodine and phenobarbital for one week when his basal metabolic rate was found to be plus 35. After one week of treatment, the basal metabolic rate was reported to be normal.

After discharge from service he continued to have mild attacks almost every day. The attacks were gradually becoming more severe. He was employed as a surveyor and draftsman, but missed work frequently because of his complaints. In his own words he described the attacks as follows: "A typical attack begins with weakness in the knees and continues with a flushed sensation in the head and chest. The attacks are always accompanied by extreme nervousness. At all times any exertion during a mild attack brings on more severe symptoms. Occasionally the attacks are severe without exertion. At times the flushed sensation becomes painful. I developed pain in the solar plexus, base of the skull, and left eye. When attacks become severe, I usually vomit. An attack always leaves me fatigued, and unless I rest afterwards another episode follows. Individual attacks last from thirty seconds to ten minutes." Change of position had not been noted to produce attacks, but he had noted a pounding sensation in his chest each morning immediately after arising.

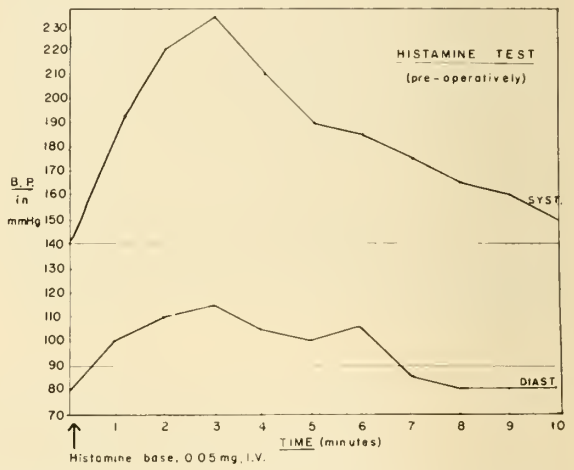


Fig. 1. Preoperative histamine test showing blood pressure response.

At the time of admission to the Veterans Hospital he was receiving compensation for "anxiety state." Several physicians who had seen him prior to admission made a diagnosis of hyperthyroidism. The basal metabolic rate was reported by one physician to be plus 85. He gave a history of jaundice while in service. There had been no recurrence.

Physical examination revealed a well developed and nourished male who did not appear acutely ill. He appeared extremely concerned about his condition. The patient wondered if his complaints were associated with a mental condition, but did not believe they were. The blood pressure ranged between 120 and 150 mm. of mercury systolic and 75 to 100 mm. diastolic. With change in position marked change of force and rate of heart beat was noted. Massage of the renal areas did not produce an attack. A fine tremor of the hands was noted, but no abnormal perspiration was seen. A small amount of mucopurulent white discharge was expressed from the urethral orifice. No other abnormalities were noted.

A complete blood count, sedimentation rate, and urinalysis on admission were normal. The blood Kahn test was negative. Blood cholesterol was 208 mg. per cent. A six-hour glucose tolerance test showed a normal curve. The basal metabolic rate on three successive days

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was minus 2 per cent, plus 1 per cent, and minus 2 per cent. Bromsulfalein retention was 5 per cent in forty-five minutes. Serum proteins were normal. Cephalin cholesterol flocculation test showed 1 plus in twenty-four hours and 3 plus in forty-eight hours. A urethral smear revealed Gram negative and positive cocci, but no N. gonorrhea. A routine electrocardiogram revealed right axis deviation. No other abnormalities were noted.

During the first week of hospitalization the patient remained a diagnostic problem. It was thought that hyperthyroidism had been ruled out. Paroxysmal hypertension due to an adrenal tumor was suggested as a possible diagnosis. The patient had experienced no attacks up to this time while in the hospital. A histamine tolerance test was then done according to the method of Kvale and Roth. Histamine base, 0.05 mg. in 0.5 c.c. normal saline, was injected intravenously, and blood pressure readings were taken at one-half and one minute intervals until the preinjection blood pressure was reached. The result of this test is shown in Figure 1. The result was thought to strongly suggest an adrenal tumor. When this test was repeated, the blood pressure rise was almost exactly the same. The blood sugar, fifteen minutes after injection of histamine, showed a rise of 24 mg. per cent above the preinjection level. A cold pressor test showed a 30 mm. rise in the systolic pressure and a 20 mm. rise in the diastolic pressure one minute after his hand was placed in ice water. Three minutes later the blood pressure had reached its basal level. Tetra-ethyl-ammonium chloride in a dose of 100 mg. was injected intravenously. Blood pressure readings at minute intervals after injection showed only a 10 mm. rise in systolic and diastolic pressures two minutes after injection. The blood pressure gradually fell to 10 mm. below the basal pressure in fifteen minutes. Twenty-five days after admission the patient was seen during an attack. He complained of a burning sensation in his upper chest, palpitation, weakness, and a flushed sensation. The blood pressure was 220 mm. of mercury systolic and 110 mm. diastolic when first seen. In the next ten minutes the blood pressure dropped to 126 mm. of mercury systolic and 68 mm. diastolic. An intravenous pyelogram done a few days later was reported to be normal (Fig. 2). Perirenal air insufflation was then done. Six hundred c.c. of air were injected into each perirenal space. X-rays showed a globular mass overlying the upper pole of the left kidney (Fig. 3). On the basis of these findings he was sent to surgery with a diagnosis of pheochromocytoma of the left adrenal gland.

Preoperatively the patient was given nembutal, grains 1½ orally, and morphine sulfate, grains ¼, and scopolamine, grains .01, hypodermically. In addition he received adrenal cortical extract (Eschatin) 10 c.c. intramuscularly and 1000 c.c. of normal saline intravenously on the morning of operation.

Operation was performed on May 5, 1948. Anesthesia was induced with pentothal sodium and maintained with nitrous oxide and ether. Induction was accompanied by three episodes of laryngospasm. The blood pressure on one occasion became elevated to 200 mm. of mercury systolic and 100 mm. diastolic, and at another time to 240 mm. systolic and 130 mm. diastolic. These hypertensive episodes were controlled by injecting pentothal intravenously. Through a left lumbar incision a vascular tumor measuring 5 cm. in diameter was found lying inferior and anterior to the left adrenal gland. It was

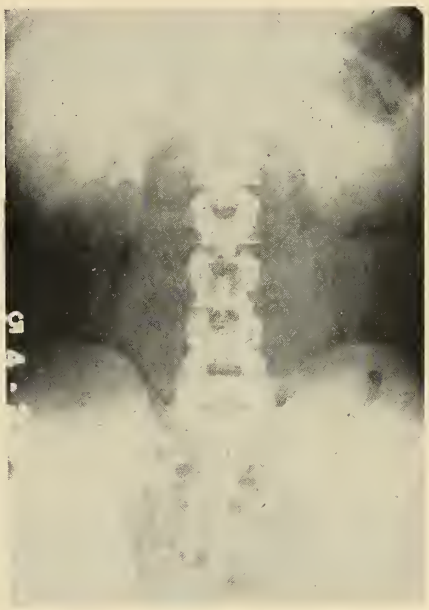


Fig. 2. Normal appearing intravenous pyelogram failing to show tumor.

attached to the adrenal gland at only one point, but was free from the left kidney. Necessary manipulation about the tumor provoked a third paroxysm of hypertension, and the tumor was subsequently removed. No other tumor tissue was found. Immediately after removal of the tumor the blood pressure dropped to 90 mm. of mercury systolic and 50 mm. diastolic. Before leaving the operating room he was given 1 c.c. epinephrine in oil 1:500, intramuscularly, ephedrine sulfate 25 mg. intramuscularly, and ephedrine sulfate 25 mg. intravenously. During the operative procedure 1500 c.c. of whole blood were given intravenously. Immediately following operation he again received adrenal cortical extract 10 c.c. intramuscularly. During the first twenty-four hours postoperatively 3,000 c.c. of solution containing 5 c.c. of 1:1000 epinephrine in 1000 c.c. of normal saline was given in a constant drip intravenously. The rate of flow was regulated according to the blood pressure readings. Readings were taken every 5 minutes during this time. During the first 24 hours postoperatively the blood pressure was maintained between 90 and 120 mm. of mercury systolic and 50 and 75 mm. diastolic. At no time did the systolic blood pressure drop below 90 mm. of mercury. He became ambulatory on the 2nd postoperative day. On the 3rd postoperative day he developed a thrombophlebitis of the veins in the right cubital fossa. Dicumarol therapy was begun at once. On the 7th postoperative day he developed a thrombophlebitis of his left lesser saphenous vein. Aside from this there were no complications.

Thirteen days postoperatively the histamine and cold

pressor tests were repeated. The histamine test, as shown in Figure 4, in contrast to the preoperative test, showed an initial drop in blood pressure followed by a slight rise. This was considered to be a normal histamine response. The cold pressor test showed no appreciable change from that done preoperatively. The basal metabolic rate after operation was plus 2 per cent. Cephalin cholesterol flocculation test revealed 1 plus in 24 hours and 2 plus in 48 hours. An electrocardiogram after operation showed no change from that taken preoperatively.

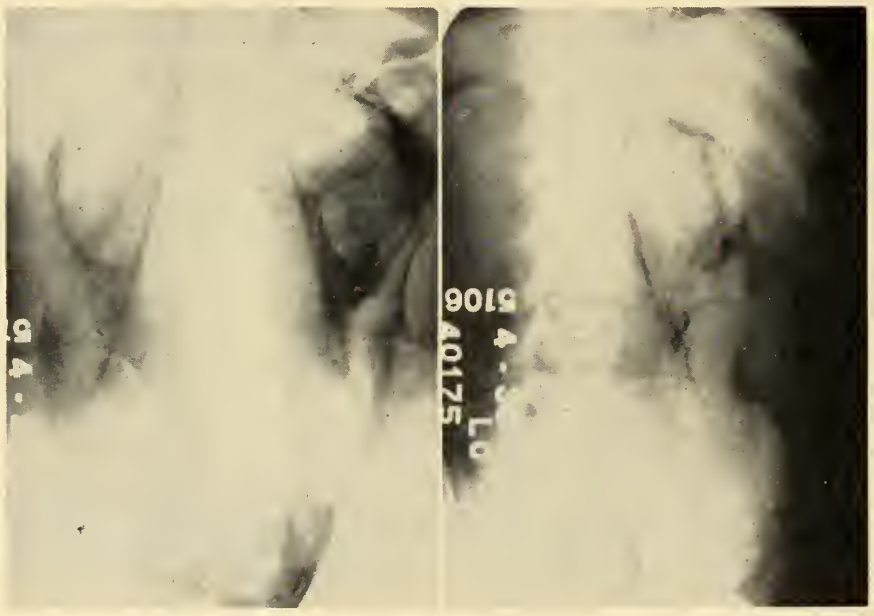


Fig. 3 *A.* Anterio-posterior roentgenogram following perirenal air insufflation showing tumor mass overlying upper pole of left kidney. *B.* Left oblique view.

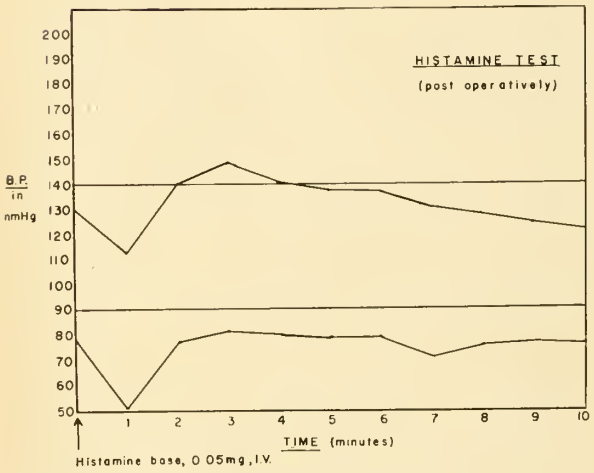


Fig. 4. Postoperative histamine test showing blood pressure response.

The tumor, as reported by the Pathological Department, consisted of a spherical mass 5 cm. in diameter (Fig. 5). The total weight was 66 gms. It appeared slightly globular and well encapsulated in its entirety. On cut section the tumor mass presented a pale grayish moist appearance with purple mottled areas which were softer in consistency, and one cystic area 1 cm. in diameter containing bright red fluid. The tumor as a whole had a rubbery consistency. Microscopically (Fig. 6), sheets of large polygonal cells with relatively large hyperchromic, vesicular nuclei were seen. The cell membrane was distinct. The cytoplasm was abundant and acidophilic. Other cells had a bizarre appearance. They were large and spindle shaped. The nuclei were larger and more hyperchromic. These cells were separated by what appeared to be empty spaces. The pathological diagnosis was pheochromocytoma of the adrenal gland.

The patient was discharged from the hospital on June 2, 1948, without medication. Symptoms and signs of thrombophlebitis involving the veins of the right arm and left leg had subsided almost completely when discharged. The urethral discharge was thought to be due to a meatitis, non-venereal. The patient stated that he had no symptoms suggesting even a mild attack, such as experienced in the five years preoperatively. The pounding sensation in his chest noted upon arising in the morning, experienced before operation, was no longer present. His blood pressure during the last week of hospitalization averaged 120 mm. of mercury systolic and 75 mm. diastolic.

Discussion

This patient resembled numerous others in the literature in that, during the illness, diagnoses of anxiety state, hyperthyroidism, and essential

hypertension were made. Hypermetabolism, abnormal glucose tolerance curve, and glucosuria[16] are reported in a number of cases, but these abnormalities were not demonstrated in our patient during our observation of him. The BMR of plus 85 reported a few months prior to hospitalization is difficult to interpret in view of 3 normal BMR's during the patient's hospital stay. The increase of 24 mgs. per cent in the blood glucose level during a histamine-induced attack may have been significant, but does not approach the hyperglycemia which has been reported.[3,18]

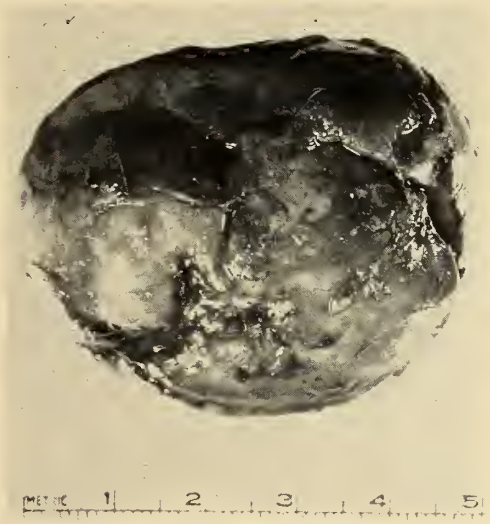


Fig. 5. Tumor removed at operation.

Our results during the histamine test were in accord with those of Roth and Kvale.[25] Although the patient's symptoms during the test were not identical with those during a spontaneous attack, they were similar. The blood pressure response was striking, and provided a distinct contrast to that following the cold pressor test. Roth and Kvale have emphasized the importance of contrasting the histamine test with the cold pressor test, since patients with essential hypertension may exhibit a pressor effect following histamine which is approximately similar quantitatively to their response to the cold pressor test. The postoperative histamine test in our patient was comparable to that of a normal person.

Our experience with the use of tetra-ethyl ammonium chloride in an attempt to precipitate paroxysm of hypertension did not concur with that of LaDue.[21] His patient responded to 100 mgs. of tetra-ethyl ammonium bromide intravenously in much the same way as he did to histamine. Our failure to precipitate an attack suggests that histamine remains as the most reliable means of precipitating attacks of paroxysmal hypertension.

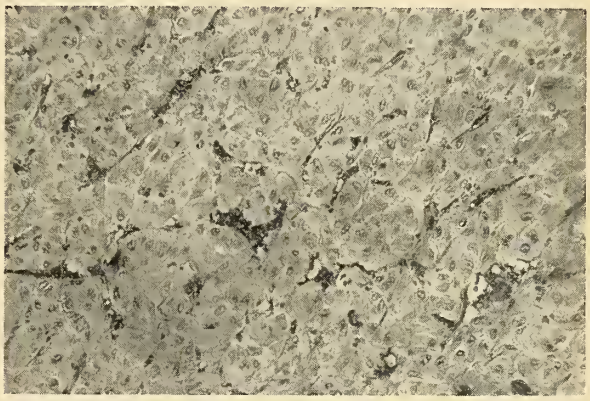


Fig. 6. Section of tumor.

The value of perirenal air insufflation was again demonstrated. With this technique the tumor was well visualized while intravenous pyelography failed to suggest the presence of an adrenal tumor in spite of excellent visualization of the renal shadows. The air insufflation was well tolerated and although subcutaneous emphysema was demonstrable following the procedure, the patient's symptoms were minimal.

The benzo-dioxane group of drugs was not used as a diagnostic test in this patient, primarily because he presented the picture of paroxysmal, rather than fixed, hypertension. Many authors, particularly Thorn and Hindle,[29] Green,[16] and Phillips[24] have demonstrated that fixed, chronic hypertension, not unlike essential hypertension, can dominate the clinical picture of a patient with pheochromocytoma. The observations of Goldenberg, et al,[6] are of great importance in this group of patients. They demonstrated a qualitative difference between the effect of benzo-dioxane on epinephrine-induced hypertension, as due to a pheochromocytoma and essential or renal hypertension, the drug producing a fall in blood pressure in the former and either no effect or a pressor effect in the latter. Ganem and Cahill[14] confirmed these observations and reported a case where the use of benzodioxane was instrumental in the demonstration of residual tumor tissue in a 12-year-old child who had had a pheochromocytoma removed. Fixed hypertension had persisted after the first operation. The benzodi-

oxane test might well be considered in the study of patients with essential hypertension, and should certainly be used when any factors in the patient's history or findings suggest the possibility of pheochromocytoma.

Surgical removal of pheochromocytoma is characterized by two types of vascular response. During the early stages of operation and particularly in the course of manipulation of the tumor, severe paroxysms of hypertension may ensue. The question might be raised whether benzodioxane with its adrenolytic action, of brief duration, might be used to counteract these paroxysms of hypertension during operation. Following removal of the tumor, a shock-like state with marked hypotension is common, generally thought to be due to epinephrine lack. However, decreased blood volume related to prolonged severe vasoconstriction,[8,13] as well as heart failure secondary to extreme hypertension[2] have been postulated as the mechanism producing the shock. Surgical fatalities have resulted from both severe hypertension and postoperative shock. Epinephrine as a supportive measure during this stage of hypotension has been almost universally used. In addition Thorn and Hindle,[29] Biskind, et al,[5] and others have recommended the use of adrenal cortical extract preoperatively and postoperatively. Our patient received adrenal cortical extract in this manner. Following removal of the tumor hypotension developed and he received large amounts of epinephrine and ephedrine. Constant intravenous infusion of a dilute solution of epinephrine in saline with appropriate variations in rate appeared to be a satisfactory means of controlling the unstable postoperative blood pressure in our case.

Both transperitoneal and lumbar retroperitoneal approaches to the adrenal area have been used. When the tumor has been well localized, as was in the case of our patient, adequate exposure is obtained by the usual kidney incision. When exploration of both adrenal areas is desired, the transperitoneal approach may be indicated. The operative mortality has progressively decreased. Up until 1936 there was a 37 per cent mortality rate among nineteen patients. Of approximately twenty patients subjected to operation and reported during the past two years, only one operative death has occurred.

Successful removal of a pheochromocytoma promises a cure in all but a very few cases. Calkins and Howard[10] reported a remarkable instance where a woman and her niece both had pheochromocytomas removed and both had recurrent symptoms requiring reoperation. Additional chromaffin tumor tissue was found in both patients. Ganem and Cahill's case also required a second operation for an extra-adrenal chromaffin cell tumor. The great majority of pheochromocytomas are benign but malignant changes do occur. Malignancy is almost always associated with bilateral tumors.[27]

The increasing number of cases reported suggests that these tumors are more common than was believed a decade ago. This together with the decreasing operative mortality emphasizes the importance of considering the diagnosis and of making use of the available diagnostic procedures when indicated.

Summary

The case is presented of a twenty-seven-year-old male with a four-year history of paroxysmal hypertension. The preoperative diagnosis of pheochromocytoma was made with the aid of the histamine test and x-ray visualization of the tumor by perirenal air insufflation. Successful operative removal has apparently resulted in a complete cure. Certain aspects of diagnosis and treatment are discussed.

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Case Report

CASE RECORD OF ST. MARY'S HOSPITAL, DULUTH

Clinico-Roentgen Pathological Presentation

Edward L. Tuohy, M.D., *Co-ordinator*
Wm. V. Knoll, M.D., *Pathologist*

Moses Barron, M.D., University of Minnesota, Minneapolis
Outlining Problems and Differential Diagnosis

Case Presentation

The case is that of a man, aged forty-three, with a decisive critical epigastric pain (for details *vide infra*). The dates, April 22, 1948, to May 8, 1948, cover the period of his acute illness up to his death.

The previous health and history contributed nothing determinative, except an indefinite reference to spells of "heart burn," helped by food and soda.

After eight days of acute illness, signs of gastrointestinal hemorrhage supervened.

For the next few days the illness took on serious implications: shock, tachycardia, hiccoughs, spread of pain over the abdomen, a failure to respond to blood and other transfusions.

In an attempt to find the source of hemorrhage an unsuccessful upper abdominal exploration was done.

There was no opportunity for gastrointestinal barium roentgen studies. The laboratory profiles appear in the discussion.

Dr. Moses Barron: I have been given this detailed case history for differential diagnosis, and from it I shall quote and comment. "A forty-three-year-old Great Lakes seaman on April 22, 1948, developed a sudden, sharp, epigastric pain, localized beneath the tip of the sternum. It did not radiate. This was associated with emesis immediately after every attempt to eat. On resting the pain would diminish, finally disappearing, only to recur when he ate."

The history so far tells of a sudden epigastric pain in the lower sternal region which recurred apparently with the swallowing of food. There are a number of things which have to be taken into consideration: carcinoma of the esophagus or carcinoma at the cardiac end of the stomach; carcinoma of the body of the stomach or peptic ulcer of the gastric or duodenal type; one also has to consider a dissecting aneurysm of the arch or thoracic aorta, a low esophageal diverticulum or hiatus hernia.

For carcinoma of the esophagus the onset was too sudden. There was no history of difficulty in swallowing solids as compared with liquids. The story thus far is against carcinoma of the esophagus.

I read further from the history: "The pain did not come on with effort." This statement is made to help rule out coronary sclerosis with either anginal attacks or coronary thrombosis as a possible explanation. And further: "These pains became so severe that he was hospitalized in another city. Two days before admission to St. Mary's on April 30, 1948, and eight days after the onset of his present illness, he had several tarry stools, and the day preceding admission to St. Mary's he developed hematemesis and that led to his reference here." This additional history rules out the possibility of either coronary disease or a dissecting aneurysm. There would not be hematemesis or tarry stools. An aortic aneurysm which may gradually penetrate into the stomach might have to be considered *but this is very unlikely*. The hematemesis would have appeared at once and not a week later, and there would have been a history of distress, characteristic of aneurysm, which was not present. I now look at the meager past history and it adds little: "The patient had had 'heartburn' for many years. He could relieve it with soda between meals, or by eating. This had not inconvenienced him greatly and he had never sought medical advice regarding it. There was no history of previous surgery, serious illness or accident. The systemic review otherwise was entirely negative."

I now come to the physical examination from which we expect so much in these days of exalted laboratory and roentgenological techniques: "The patient was a well-developed, well-nourished white male who complained of sharp epigastric pain and who had evidence of hematemesis, some pallor—pulse regular but a little fast—some blood emerging from the corner of the mouth on one side. Blood pressure was 140/76; pulse 136; temperature 102, respirations 28. Neck was negative, chest showed equal bilateral expansion and the lungs were normal to percussion and auscultation. The heart showed no enlargement to percussion. There were no thrills, murmurs, or arrhythmias. No masses were palpable in the abdomen. The kidneys, liver, and spleen were not palpated. The patient showed moderate epigastric tenderness and the abdomen was tense but not rigid.

"Laboratory data: red blood cells, 1,840,000; hemoglobin, 4.9 grams; white cells, 16,100; polymorphonuclear cells, 92; 6 lymphocytes and 1 monocyte. Urine: specific gravity, 1.018; 5-6 white cells and 1-plus sugar, otherwise negative. Stool was 4-plus for occult blood."

The patient was not rallying; the clinical course continued stormy. "Shortly after admission the patient developed hiccoughs. He continued to vomit blood the

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The case presentation has been epitomized and abridged for publication to enable Dr. Barron to read into his discussion the essential clinical data, and thus avoid duplication.

first night of hospitalization and also had four bowel movements, all of which contained large amounts of dark red blood. The next morning (May 1, 1948) the blood pressure was 90/40 and the pulse was 128. Two blood transfusions were given that morning, and an operation was performed at noon. The patient survived a week after his operation. The operative details are not given; but I am assured that *death was NOT due to "an operative misadventure."*

The additional history helps to rule out some of the other conditions mentioned above. Carcinoma of the cardiac end of the stomach would give a slowly progressive development of dysphagia. The dysphagia would not be as intense. A characteristic feature of the distress here is the pain during the act of swallowing which ends abruptly soon thereafter. The massive hemorrhage also makes carcinoma less likely. In carcinoma of other parts of the stomach the distress starts sometime after the ingestion of food and continues for a considerable period after. Peptic ulcers of the stomach or duodenum frequently cause distress that is related to meals, but it usually starts from fifteen minutes to three hours after taking the food. A para-esophageal diverticulum, especially one low down, has to be considered. This generally has a longer history, and the course is much less intense than in this case. The possibility of ulceration of the diverticulum resulting in hemorrhage must be kept in mind. But here again the dysphagia from the act of swallowing is not so abrupt in onset and in termination.

Conclusions and Summary

There is one condition which has thus far not been mentioned but which fits in almost perfectly with the character of the distress, the history of the onset and the absence of physical findings. That condition is a *peptic ulcer of the lower end of the esophagus.* There are very few if any conditions which result in this peculiar symptom of a severe dysphagia during swallowing with a very abrupt onset and termination, and almost complete relief between periods of deglutition. The finding of a definite leukocytosis has been brought up, and this can be explained by a perforation of the ulcer with the infection spreading into the surrounding tissues of the mediastinum.

Therefore in making a differential diagnosis in this case I would place first and foremost a *perforating ulcer of the lower end of the esophagus,* and the other conditions in order of their importance would be ulcer in the cardiac end of the stomach, ulcer of a para-esophageal hernia, carcinoma of the cardiac end of the stomach, peptic ulcers with perhaps perforations of the stomach or duodenum, carcinoma of the fundus or pyloric part of the stomach.

The Anatomical Diagnoses

1. Peptic ulcer of lower end of esophagus.
2. Perforation of ulcer via the esophageal hiatus.
3. Fatty necrosis from pancreatic invasion.
4. Mediastinitis and pleuritis with pneumonitis from regurgitation of pancreatic fluid into the chest via the route of perforation and extension.

Pathological Discussion

Dr. Wm. V. Knoll: Dr. Barron in his excellent analysis of this case has already pointed out or suggested the pathological picture found at necropsy. The ulcer of the esophagus, 1 by 2 cm. in size and located 1 cm. above the cardia, had perforated and permitted the escape of the content of its lumen into the mediastinal tissues. Apparently fluid from the stomach and duodenum with its pancreatic ferment had regurgitated into the mediastinal tissues via this perforation resulting in a manifestation of fat necrosis involving the lower two-thirds of the left pleural cavity. Dark brown fluid to the extent of 800 c.c. filled the left pleural space and 500 c.c. of similar fluid within the right pleural space. The right side however, showed no fat necrosis, but a hazy parietal pleura. Both lungs present dull, hazy pleural coverings, having been changed by the digestive fluids. The right lung weighed 800 gm. and the left 650 gm. Both lungs disclosed marked consolidation, and partial collapse was noted in the left side. Granular patches of pneumonitis were present.

The pericardial sac was slightly adherent to the 400 gm. heart by fibrinous adhesions.

The inflammatory process had made its way through the esophageal hiatus into the abdomen. There was no hiatus hernia. Along the lesser curvature of the stomach there was a mass of adhesions involving a portion of the greater omentum which connected the mass with the head of the mesenteric tissue at the ligament of Treitz. This mass was associated with foci of fat necrosis. The peripancreatic and periduodenal fatty tissue presented similar foci of fat necrosis, and the mesentery and mesocolon participated in the process but to a lesser extent. The head of the pancreas was in part involved in beginning necrosis along its periphery. The liver, enlarged to 1800 gm., was average in appearance, as was the gall bladder, which contained three calculi varying from 1 to 2 cm. in diameter.

Histological studies of the various tissues supported the listed findings but added no further information.

Chronic ulcer of the esophagus is not a common finding in necropsy studies. In a study of case reports and summaries there is general agreement that such an ulcer may follow abnormal entrance of hydrochloric acid into the distal end of the esophagus. This regurgitation of hydrochloric acid is most commonly associated with a congenitally short esophagus or a diaphragmatic hernia or both. The presence of aberrant gastric mucosa in the lower one-third is another etiological factor. In Chamberlin's report on seven cases, found over a period of ten years at the Lahey Clinic, six were associated with short esophagus or diaphragmatic hernia or both and one only was associated with aberrant gastric mucosa. Other possible factors have been listed such as chronic recurrent vomiting, pyloric stenosis, or an abnormally patulous cardia. Some case reports call attention to the co-existence of a chronic gastric or duodenal ulcer.

Since 1939 the diagnosis of esophageal peptic ulcers has been greatly influenced by the following five criteria presented by Chamberlin of Boston: (1) the ulcer must

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History of Medicine In Minnesota

NOTES ON MEDICINE IN FREEBORN COUNTY, 1857—1900

ANDREW GULLIXSON, M.D.
Albert Lea, Minnesota

(Continued from January issue.)

Dr. Howard Bell.—Nora Guthrey, in her *Notes, Fillmore County,* has given all known data concerning Dr. Bell, who evidently left Albert Lea in a very short time, for the only record of his activities in Freeborn County is contained in the following newspaper item of 1885, "An accomplished physician, Dr. Howard Bell located at Albert Lea and is being introduced into practice by Dr. F. A. Blackmer."—*Standard,* July, 1885.

Dr. John P. von Berg was born at Hazel Green, Wisconsin, July 15, 1858. He died at Albert Lea of carcinoma of the stomach and liver, December 4, 1929. His father, George Leonard von Berg, was born in Hatershofen, Wurtemburg, Germany, and migrated to America and married Elizabeth Nicolas, at Hazel Green, Wis. They had four children: Dr. John P.; George, D.D.S., Charles City, Iowa, died 1940; Lydia B. (Werk), Charles City, died 1893; and Leonard, also of Charles City, died 1889. Dr. John P. von Berg married Dorthea Dittmer of Guttenberg, Iowa, June 5, 18—. To them five children were born: Leonard E., D.D.S., Charles City; John Phillip, D.D.S., Albert Lea; Nora B. (Hickman), wife of a minister in Saint Paul; Eva Lee (died 1938), who was head of the department of the High School of Commerce, Portland, Oregon; and Dorthea E., Dean of Girls, Vancouver, Washington, High Schools and Secretary of the Western Division of the Deans' Association.

Dr. von Berg received his early education in the public school at Charles City, Iowa. Then he attended the normal school and the General English College, of Galena, Illinois. Finally he entered Morningside College at Sioux City, Iowa, where he was an honor student. He attended Hahnemann and Rush Medical Colleges in Chicago and graduated in 1884. He also made use of his normal school training and spent some time teaching in the public schools of Clinton County, Iowa. He attended postgraduate schools in Chicago in 1890, in New York in 1895, and in San Francisco and Philadelphia in 1899. He received license to practice in Iowa in 1884 and in Minnesota in 1885. He held memberships in local and state medical societies and in the American Medical Association. He was a charter member of Freeborn County Medical Society and served as its first treasurer. He held the office of president from 1909 to 1922. He was a member of Naeve Hospital staff. He served as county coroner, was a member of the board of education and a director of the Citizens' National Bank of Albert Lea. He also served on the pension board of the Spanish American War, from 1900 to 1906.

He was an inveterate reader in medicine and possessed one of the finest of private medical libraries, including books and periodicals from leading German universities. He had the first x-ray apparatus and established the first x-ray laboratory in Albert Lea. He was a solid general practitioner throughout horse-and-buggy days and gave special attention to obstetrics. He loved fine horses and

always drove spirited spans in caring for his large practice. Fees were small during the greater part of his allotted work days, but he attended diligently and faithfully all who called him, whether with or without prospect of remuneration.

He was a tall stately gentleman, always neatly dressed, and wore a well-groomed full beard. He was slow and careful of speech, but possessed a brand of dry wit and humor that intrigued his friends, who often hailed him in passing in the hope of hearing a funny story or experience. He said to one of his good friends one day in discussing a fellow townsman, "That man talks too much." The friend answered, "Well, Dr. von Berg, you will never be hanged for what you do not tell." The doctor replied, "But I would rather be hanged for that than be accused of overstatement." An anxious mother asked him eagerly concerning the medication for her child, "Doctor, what is this medicine for?" "That is for scarlet fever," he replied. "And what is this other one for, please?" "That is for scarlet fever too," he replied.

But he was a kindly man and his heart was in his profession. He served in love of humanity, but with firm gentleness and gentle firmness. As long as he was able to practice, he continued his habit of standing by in the sick room when his patient was dying. Often sacrificing his own need of sleep and rest, he, by his presence, would add comfort and courage to that afflicted home, sitting quietly with his hand at the fleeting pulse. With his passing passed also the last in line of that nobility around here.

Dr. von Berg was a deeply religious man, a member of the Methodist Church and the Knights of Pythias. During the forty-four years of his practice, his name and character were without spot or blemish. Of him his daughter Eva Lea writes:

"Think of the wealth of good he has done, the fullness of the life he has lived, the thousands whose lives he has touched and blessed. How unstintingly he gave of his time and money to those in need. His integrity was without fear. What a heritage he has left us."

A very short time before he took to his last sickbed, the writer met him on the street. "What a strange coincidence," he said, pulling out his watch and looking in the distance. "The court house clock has stopped, my watch has stopped, my income has stopped, and very soon, now, I shall stop." Then he passed on with a smile.

"Dr. ——— Nichols, from Red Wood Falls, located at Hartland, comes well recommended, and already has a large practice. Will open a drug store."—*Standard*, June, 1888.

"Dr. Nichols skipped about 12 M. Quacks and humbugs in the medical line better steer clear of Hartland."—*Standard*, July 12, 1888.

"Dr. Hetlesaether, of Des Moines, Iowa, came to Alden in 1888, speaks Scandinavian and German."—*Enterprise*, February, 1888. Evidently Dr. Hetlesaether remained only a very short time as there is no record of a continued practice.

Dr. John Herman located at Albert Lea in the early part of November, 1883, but in the same month moved to Spink County, South Dakota.

Dr. O. H. Olson of Northwood, Iowa, located at Albert Lea in 1888. He was recommended as a finely educated and experienced physician. "At first his practice was successful, but it soon became known that he was an addict to

morphine and cocaine. About a year later his mind became affected and after a murderous attack on his wife, he was removed to an asylum in Ohio."—*Extracts,* Nora Guthrey. According to the medical directory, 1900, Dr. O. Hansteen Olson was located at Erskine, Polk County.

Dr. Charles Monroe Cannon, an accomplished physician, surgeon, and gentleman, located at Alden in 1887. He evidently returned to continue his medical studies at Bennett Medical College, Chicago, from which he graduated in 1888. He married Edith Morey, a member of an early pioneer family at Alden, bought the residence of Dr. G. A. Stevenson, and decided to locate and become a permanent citizen there. He commanded the respect of the people of the community, who considered themselves fortunate in securing such a capable and worthy citizen. In 1889 he received the appointment, under Congressman Dunnell, of physician in charge of the White Earth Indian Agency. In May, 1890, he re-located at Alden and continued to practice there until February, 1893, when he moved to Saint Paul, where he practiced until his death in 1923. He was a member of the State Board of Medical Examiners from 1902 to 1905.

"**Dr. Burt Robertson,** one time at Alden, died in Graceville, Minnesota, October 14, 1896, of paralysis. He was editor of a paper at that place and was also a noted orator in that section of the country."—*Enterprise,* October, 1896.

Dr. J. M. Todd.—The family "Todd" has a genealogy that dates back to Scotch ancestry prior to the fourteenth century. Some of the Todds migrated to England, and the earliest known English ancestor, John Todd, was High Sheriff of York, England, in 1390. Members of this Todd family came to America and settled in Massachusetts, Virginia, and Connecticut.

Christopher Todd, born at Pontefract, England, in 1617, was the first to come to America. He landed in Boston in 1637 and settled at New Haven, Connecticut, where he became a farmer, miller, and baker. The Connecticut Todds were progenitors of their namesakes in these sketches. Many of their line became prominent in the pulpit and in medicine. A number served with distinction during the Revolution. Rev. James Doeg Todd, father of the two doctors, James M. and William E., was born at Mina, Chautauqua County, New York, November 22, 1826. In 1843 the family moved to a farm at Mount Hope, near Apple River, Illinois. Rev. Todd studied theology with the first class enrolled at Beloit Seminary, Beloit, Wisconsin, and from 1859 served congregations in Wisconsin, Iowa, Minnesota, Kansas, and finally in Maryland up to the time of his death at Hagerstown in 1914. He had seven children, of whom Drs. J. M. and Wm. E. Todd were the oldest.

Dr. James Marcus Todd was born on the farm near Mount Hope, Illinois, October 12, 1858. He studied at Beloit College and from there went to Northwestern University, where he attended the medical school, from which he graduated in 1887. In the meantime he had read medicine with Dr. Wedge, and on his ascent as preceptor, went to Madison, Minnesota, where he practiced part time through 1886 and 1887. After graduation he returned to his practice at Madison until 1889, when he located at Albert Lea. Here he married Nora Abbot. They had one son, Russel Webster Todd, who was born in Madison, Minnesota, in January, 1888, and graduated from Princeton University in 1910 and from Columbia Law School in 1913.

Dr. James M. Todd was a man of unusual natural ability, was well grounded in the arts and sciences, and possessing, as he did, an appealing personality, soon

made his presence felt in the field of medicine and also in civic affairs. By his skill and devotion to the duties of his profession, he won the confidence of the public to an extent seldom realized, and early in his career drew commendations from every quarter. For several years he was president of the Board of Health of Albert Lea. He was urgent about quarantine and the care of infectious and contagious diseases and also about general sanitation relating to sewage disposal, dumping grounds, the regulation of meat markets, and the slaughtering of meat animals.

In 1894 he built and equipped a small hospital, called Albert Lea Hospital. He advertised this in the weekly papers by showing a photograph of his building, "a thoroughly equipped hospital with trained nurses, electric and medicated baths, and with every convenience for treating chronic and surgical diseases."

Attempts had been made, with Dr. Todd's unqualified support, to interest the public in buying and maintaining a public hospital for the benefit of all and open to all. Dr. Todd's little hospital received favorable consideration, but negotiations fell through, and the discouraged doctor sold his hospital in 1897 and went to New York City.

In New York City he joined his brother, David R. Todd, in forming the Center Realty Company, which built some of the city's outstanding apartment houses, apartment hotels, and office buildings, such as the Wentworth, York, Bismark, Severn, Van Dyke, and Equitable Trust Company. With the retirement of his brother in 1916, Dr. Todd formed a new partnership with Hugh S. Robertson, and three years later they joined the firm of Todd, Irons, and Robertson, headed by John R. Todd, another brother. This firm built the Central Building at 25 Broadway and reconstructed the Guarantee Trust Building. Next the firm became the Todd, Robertson, Todd Engineering Company in 1922, when Henry C. Irons left it. This firm concentrated in mid-town construction and built the Ritz Tower, the Postum Building, the Barclay Hotel, and the Graybar building.

In 1928 this firm, with the firm of Todd, Brown, Inc., of which Webster B. Todd, Dr. Todd's nephew, was a member, contracted for the reconstruction of Williamsburg, Virginia, where John D. Rockefeller, Jr., financed the rebuilding of the Colonial Community in its original architecture.

Until his retirement in 1937, Dr. Todd was particularly active in the mechanical and engineering development of Rockefeller Center, which Todd, Robertson, Todd, and Todd and Brown managed since construction began in 1931. The firm supervised the contracting, architecture, and rentals of the Center. John R. Todd was credited with the largest share of this direction.

Dr. J. M. Todd, whose home in New York was at 42 Fifth Avenue, was a trustee of Beloit College, to which he often contributed. He also aided Boothbay Harbor, Maine, where he had his summer home. He equipped the town office there at his own expense. Dr. Todd's interest in Beloit College became evident in 1921, when he made large gifts for scientific equipment. When plans were discussed for construction of men's dormitories on the campus, he gave generously, both of his engineering skill and of his finances. He also provided the department of science with modern equipment and reference books. He was responsible for rebuilding and re-equipping the departments of chemistry, physics, mathematics, and geology.

Dr. Todd practiced medicine in Minnesota for ten years, and his success in this field was unqualified. For forty years and with the same success, his energies and his skills were devoted to constructing a number of the largest projects in the largest city of our land. As with James J. Hill, when Hill had finished his Great Northern Railroad, Dr. Todd might justly have said, "I have put my

mark on the face of the earth and they cannot rub it out." Dr. Todd died at his Boothbay Harbor home in January, 1939, at the age of eighty-one.

Dr. Gaffney came to Hartland in 1890. According to old residents there, he was not a doctor. Records show that he operated a meat market in 1890-91 and then rented the market and learned telegraphy. His next venture was the raising of trotting horses. In 1893 he was at Independence, Iowa.

Dr. ——— Lang located at Hartland in 1890. In 1991 he moved to New Richland, Waseca, County, but came to Hartland every Thursday.

Dr. John Watson, a graduate of the Medical College of Utica, New York, came from Minneapolis and located at Alden in 1892. He was at that time about sixty years of age. He did not remain long at Alden, but moved to Mountain Lake and from there returned to Minneapolis. He married a Miss Heinke of Minneapolis.

Dr. Merton L. Head was born at Albion, Wisconsin, December 14, 1867. Following his boyhood country schooling, he studied at Albion Academy and later taught country school. He matriculated at Rush Medical College and in 1894 graduated from there and went directly to Hartland to begin the practice of medicine. In 1896 he married Margit Torkildson of Hartland and to this union nine children were born. His wife was killed in an automobile accident in 1931, and in 1938 Dr. Head married Mrs. Elizabeth Stieler. In 1911, on advice of physicians at Mayo Clinic, Dr. Head sold his practice at Hartland. He moved to a farm two miles south of Albert Lea and became an ardent dairyman and a breeder of Jersey cattle, continuing a successful business until the time of his marriage in 1938, when he retired. He died at Albert Lea, December 16, 1941, of coronary thrombosis, aged seventy-four.

Dr. Head was a fine gentleman and a devoted husband and father. He gave unstintingly of himself in his large but arduous practice. His entire span of medical practice was in the horse-and-buggy days, and if one could enlarge on some of the details of his daily calls through winter's storms and springtime's mud, episodes would be revealed that would match any on record for hardships and endurance. He was admired and loved by his patients, fellow townsmen, and all with whom he came in contact.

Dr. William E. Todd was born April 26, 1861, at Willow Creek, Wisconsin, where his early schooling began. From 1869, his father held pastorates at Winnebago City, Granite Falls, Wabasha, Albert Lea, and finally at Altamont and Independence, Kansas, where he served until 1888. William graduated from Emporia College with the B.A. degree in 1886. He graduated from Northwestern University Medical School in 1890; and after his hospital internship, he took up practice in the logging and mining region about Neaunee, in the upper peninsula of Michigan. He married Maud Augusta Roller of Altamont, Kansas, in November, 1890, and then went to Madison, Minnesota, where he bought his brother J. M. Todd's practice, house, goods, and horses and continued there until 1895, when he came to Albert Lea. He practiced here with his brother, assisting him in the work in his new hospital until his brother went to New York City in 1897. He continued in a successful private practice here until 1912, when he moved to Hagerstown, Maryland, where his aging parents lived. He continued an interesting and successful private practice at Hagerstown, but being a true westerner, it took him a little time to adjust himself to the customs of the East. He attended courses in medicine at Johns Hopkins Medical School

and continued practice until his death. He was a true pioneer, a great reader, was interested in art and music, and loved humanity, particularly children. He voted the Republican ticket and was a delegate to its state convention in 1888. He was affiliated with the Knights of Pythias and the Order of Odd Fellows and attended the Presbyterian Church. He did a great deal for charities and was a poor collector. He drove fast horses and loved to hunt and fish. He died at Hagerstown in 1926, aged sixty-five. He had two children: Gertrude Elizabeth, who was born April 20, 1892, and graduated with the B.A. degree from Gaucher College, Baltimore, in 1915; and James Roller Todd, who was born May 15, 1894, graduated from Mercersburg Academy in 1915, and studied at the University of Virginia two years when he enlisted in aviation in World War I.

Dr. Henrik Nissen was born April 22, 1864, at Mahlseven (County of Tromso) Norway. He attended a well-known private school for boys in Oslo, and passed his entrance examination to the University of Oslo with distinction, at the age of eighteen. A year later, he entered upon his medical course at the same university. His degree in medicine was granted in 1888.

His later training consisted of postgraduate work in eye, ear, nose, and throat in New York and Chicago in 1893, and in Berlin and Vienna in 1897. He practiced three years at LaCrosse, Wisconsin, where he located when he came to America, and in 1892, he moved to Albert Lea where he soon established a good general practice. He later built a large building for hospital purposes, with a drug store on the ground floor. This building, known as the Nissen Block, is now taken over by a large mercantile company. He served on the Minnesota State Board of Health with Dr. Charles Mayo and Dr. Peter Hewitt, secretary, in 1895 and 1896. After his return from Europe in 1897 Dr. Nissen located in Minneapolis where he earned a splendid reputation as a specialist in eye, ear, nose, and throat.

Dr. Nissen was a lineal descendant of Hans Egede (1708-1789), recorded in history as "Greenland's Apostle" for his pioneer work as a missionary among the Eskimos in Greenland. Both his grandparents were doctors, as was his father's brother, Dr. Oscar Nissen. His father, Adam Vilhardt Glahm Nissen, born in 1837, died at age twenty-nine, having served as forester and agriculturalist in north Norway. His mother, Martha Elizabeth Istad, was born in Farsund, Norway. Of that marriage, only her son Henrik survived her. Dr. Nissen married his cousin, Fayette Pauline Egede Nissen, at LaCrosse, Wisconsin, in May, 1889. To this union six children were born: Arvid Egede Nissen, Upper Darby, Pennsylvania, metallurgist; Dagny Egede Nissen, who died in 1938, having served five years as librarian in the American Library in Paris, and as hostess for the Enlisted Men's Club at Ft. Snelling; Henrik Egede Nissen, graduate of the Minnesota Agricultural School, served in the U. S. Marine Corps, 1917-1919; Ingrid Egede Nissen (Mrs. Cooper Francis), Greenwich, Connecticut; Sophie Elizabeth Nissen, assistant professor in romance languages at the University of Minnesota; Bergelot Egede Nissen (Mrs. Robert Burgess, Jr.), New York City.

Dr. Nissen was a gifted gentleman, well built, slender, moving with easy grace, fond of nature and interested in botany and zoology. In all, he was a fine companion, of even disposition, lively, fun-loving, and congenial. He left Albert Lea because he wanted his six children to be able to live at home while they attended the university. His country calls, which came to him, as well as the other doctors, at all hours and in all weather conditions, were often long and strenuous. He kept four horses and a stable boy who usually drove for him.

During the six years that he practiced here he found his full share of Freeborn County mud both from underfoot and from the whirling wheels, and had narrow escapes from runaways and violent storms. He rode horseback for exercise and pleasure, and together with his wife, would often walk the five miles around Fountain Lake on summer evenings. His favorite pastime was to listen to his wife play the piano and sing his favorite songs, or to play chess. In season, he enjoyed duck hunting with friends.

In 1905 he took a trip to Ft. Francis, Canada, and from there he visited by canoe some of the lovely islands dotting Rainy Lake where he found their rock-bound shores appealing. On one of these he built a substantial winter home, and when he found his health failing about four years before his death, he retired from active practice and spent most of his time in this home. In the winter of 1935-1936 he realized that his days were numbered and returned to his home in Minneapolis. He died May 7, 1936 (Obituary, *Minneapolis Journal,* May 8, 1936).

Dr. William L. Palmer, the fourth son and the youngest of nine children of the Rev. and Mrs. Daniel R. Palmer, was born on the family farm near Shellrock (now Glenville), Minnesota, September 22, 1867. The family came originally from England. Zachary Palmer, the son of a minister and the progenitor of this branch of the family, settled in New England in an early day. He had four sons of whom the oldest was the Rev. Daniel H. Palmer, the father of the subject of this sketch, and five daughters. The youngest son of Zachary Palmer, Frank W., took up newspaper work at an early age. He was co-founder of a daily newspaper at Des Moines, Iowa, and later co-founder of the *Chicago Inter-Ocean.* He served as postmaster of the city of Chicago, and next assumed the office of public printer during the administration of Benjamin Harrison and Grover Cleveland.

The Rev. Daniel H. Palmer, after graduating from the Baptist Theological Seminary, served two years as colporteur before his ordination into the ministry. He married Mary Caroline Buck of New York. They served congregations in and around Argyle, LaFayette County, Wisconsin, until 1863, when they moved to Freeborn County and filed on a homestead near Glenville. The Rev. Daniel H. Palmer founded the Baptist church at Albert Lea, the one at Northwood, Iowa, and organized a class at Glenville. He held services at Northwood and at Albert Lea for years, either walking from Glenville or driving a yoke of young oxen, to meet his appointments on alternate Sundays. Once, with a companion, he had a narrow escape on a trip to Northwood by losing the trail in a Minnesota blizzard. During the week he taught in the old "Green" school, and when he was called away his wife would take his place in the school room. Owing to bad weather and lack of roads, the Palmer children were taught at home until they were old enough to face the hardships of walking the necessary miles to school.

When the Rev. D. H. Palmer died in 1872, at the age of forty-eight, the twenty-one year old son, Morris, assumed the care of the homestead and family until his death in 1882. The daughter, Sarah E. Palmer, taught in the high schools of the state after her graduation from the University of Minnesota. In 1898 she went to Adyar, India, where she taught in schools of higher learning for more than forty years. She was active in school work and literary circles until she died there in 1945 at the age of ninety-one years. Daniel S. Palmer, the second son, graduated from the medical school at Cincinnati, Ohio. He practiced medicine for many years at Holdrege, Nebraska. He is survived by one daughter, Mrs. Ruth Schmilkin, now connected with the state university at Lincoln, Nebraska.

Mary Alma Palmer married James S. Casper, and they are survived by one son, Guy. Clara Jane Palmer married Benjamin Shafer of Mankato, and they are sur-

vived by one daughter, Mrs. Lottie M. Owens of Taft, California. Martha F. Palmer married Arthur W. Trow of Glenville, who for many years lectured on dairying with the Minnesota State Institute. They are survived by two sons: Clinton F. of Ontario, Oregon, and A. Palmer of Seattle, Washington. Frank H. Palmer studied theology and was of the fourth generation to become an ordained minister. He married Clara Marving of Glenville. Both died early, leaving no living descendants. Viola N. Palmer married J. Bartlett of Glenville. Their only son died in childhood. Seven of the Palmer sons and daughters taught in the old "Green" school in the early days, and each of the seven married a school teacher.

Dr. W. L. Palmer was five years old when his father died. After his brother Morris' death he became, at the age of fifteen years, his mother's chief support and companion until her death. Like the other children, he received his schooling at home until he was old enough and rugged enough to venture the long trail to the old "Green" school house. After finishing rural schools he attended the Albert Lea High School. Very early in life he chose the medical profession as his career, and after teaching in rural schools of Freeborn County for two years, he began the struggle to achieve his cherished goal. He went to Wisconsin, where he engaged in the milling business and became head miller in a 150-barrel mill. He continued work here for four years but also found time to study medicine under a preceptor. During these busy years he studied pharmacy and passed the Wisconsin State Board as an assistant pharmacist. He matriculated at Rush Medical College in 1893 and graduated in 1896, with the distinction of being elected president of his class. He began his practice at Glenville the same year, serving the surrounding community for ten years through horse-and-buggy days. He kept three span of the best driving horses obtainable, and two drivers because often his only sleep was during travel between cases. He located at Albert Lea in 1906, where for several years the leading surgeons had been Dr. Frank A. Blackmer and Dr. Henrik Nissen, and the leading physicians Dr. A. C. Wedge and Dr. J. P. von Berg. His ability and sincerity were soon recognized, and he was received with friendly cooperation.

Dr. W. L., as he is affectionately known throughout this community, because of his skill, personality, and loyalty, soon acquired a wide reputation as a surgeon. His unfailing promptness in responding to calls from patients and from doctors needing assistance, won for him life-long friendships of both doctors and patients throughout this and adjoining counties in Minnesota and Iowa. One instance of this promptness and loyalty to a doctor friend occurred on a bitterly cold and stormy December midnight thirty years ago. The patient, with a ruptured tubal pregnancy, was, by the very liberal hypodermic use of the "king" of all medicines, bundled and placed from the floor onto a barn door and transported four miles on top of an old open, two-seated Buick. When the anxious doctor and his patient arrived, Dr. W. L. had already checked in at the little four-bed cross-road hospital after his twenty-eight mile drive over drifting snow-covered roads. But aside from a few sponges, there were no sterile goods at hand. So the old wash-boiler was filled with towels, gowns, and sheets and W. L. stripped to his waist, draped the patient and himself with wet sheets, towels, and gowns, and finished the bloody job successfully. But the husband in this case had just had a sale and was to move across the border the next day. He was told that the fee would be about one-half the price of a decent funeral. The village banker was hustled out of bed, the fee was paid, and W. L. was on his way back to Albert Lea in time to meet his appointments. He was built for service, being six feet tall, straight as a ramrod, weighing 235 pounds, and always willing. Now retired at age of eighty-one, he prefers to go to his north woods cabin and do his fishing through the ice.

After locating at Albert Lea he took a very active part in founding the Naeve Hospital and its staff, of which he was elected the first president. He specialized in surgery, obtained degrees from New York Polyclinic and Chicago College of Surgery, and attended European clinics. He is a member of the American College of Surgeons, the AMA, and the Minnesota State and Freeborn County Medical Societies. During World War I he served as captain in the Medical Corps, 1917-1918. In 1889 he married Ida May Trow. His only child, a son, Dr. C. F. Palmer, a graduate of Rush Medical College, after serving internships in the Presbyterian and Washington Boulevard Hospitals in Chicago, joined his father in medical practice in 1922. This partnership was expanded to include four more members and became the Albert Lea Medical and Surgical Center.

After having served the community for fifty years, Dr. William L. Palmer retired from active practice in 1946, and since then has given his entire attention to his farms and extensive general investments.

Dr. Olav E. Rodli was born in Nordland, Norway, December 8, 1867, and received his early schooling there. He entered the preparatory school at Oslo, received his B.A. degree from the University of Oslo, and graduated from the medical department of that university in 1892. He came to Albert Lea in 1896 and began practice as assistant to Dr. Henrik Nissen. After Dr. Nissen moved to Minneapolis in 1897, he continued private practice until 1919, when he retired to devote his time to managing the family farms. He married Nora Guldbrandson and with her had four children: Gilbert, Roal, Ruth, and David. His wife died in 1918. Dr. Rodli left Albert Lea in 1931 and is now residing with a son who lives in Pennsylvania.

Dr. George H. Briggs was born at Keene, New Hampshire, January 30, 1827. He practiced at Keene but where he graduated in medicine is not known. He moved to Delavan, Wisconsin, and practiced there until he enlisted for service in the Civil War and served as surgeon in a Wisconsin regiment. After the war he practiced for two years at Delavan and then established a drug store there. He came to Albert Lea in 1892, established a drug store and continued in that business until his death December 12, 1907. His son, Charles Briggs, took over the drug store after his father's death and continued the business for years until his death.

Dr. Briggs never practiced medicine in Freeborn County. A kind, gentle, and deeply religious man, he was highly esteemed as a citizen, neighbor, and friend. He had six children, of whom two died at an early age; a daughter, Helen, who became a music teacher at Macalester College; and a son who became an officer in the Salvation Army.

(To be continued in March issue.)

President's Letter

IS IT WORTH TWENTY-FIVE DOLLARS TO YOU?

At the Interim Session of the House of Delegates of the AMA, held in St. Louis November 30—December 1, 1948, a resolution was unanimously adopted to authorize the Board of Trustees to levy an assessment of twenty-five dollars on the members of the AMA. These funds are to be utilized to form a national planning committee "to guide a nationwide plan of education on the progress of American medicine, the importance of conservation of health and the advantages of the American system in securing a wide distribution of high quality medical care." These funds will also aid in enlarging and increasing the activities of the office of the AMA in Washington, D. C.

Since the first social insurance laws were passed by congress in 1911, continuous attempts have been made by the socializers in the federal government to expand this program. This was climaxed by the introduction of the Wagner-Murray-Dingell bill in 1943 and again in 1945. Neither of these bills came out of the committee rooms.

On December 10, 1946, Thomas Perron, surgeon general of the U. S. Public Health Service, advised his field men that the executive agencies of the government had been instructed by President Truman to assist in carrying out the proposed National Health program. The U. S. Public Health Service then launched a series of so-called health workshops throughout the country, including Minnesota, to develop pressure groups for the insurance program and generating public sentiment in favor of socialized medicine. About 45,000 federal employes were so engaged and about $75,000,000 of the taxpayers' money was expended. It is absolutely contrary to law to use federal funds to influence legislation pending before congress. The Harness investigating committee reported (House Report 786, 80th congress) this to the U. S. Department of Justice, with the request that the Attorney General at once initiate proceedings to stop this illegal expenditure of the taxpayers' money.

I am submitting this information simply to emphasize the powerful influences at work to force socialized medicine on the American public. In September, 1948, Oscar R. Ewing, federal security administrator, at the request of the President, prepared a report, 186 pages long, entitled, "The Nation's Health, a Ten-Year Program." This report should be carefully studied by everyone interested in socialized medicine. In it are many misleading statements which cannot be substantiated scientifically.

In this report Mr. Ewing furthermore suggests the free choice of physicians, retaining the confidential physician-patient relationship, et cetera, the professional freedom of accepting or rejecting patients, the right to choose the method of payment for services rendered. Doctors, he states, could expect to earn better incomes under an insurance system than they do now.

Personally, I do not believe that a Compulsory Health Insurance law would ever contain these provisions, but that the ultimate outcome would be a panel system on a salary basis for physicians. A recent newspaper release stated that the new compulsory health insurance bill will be very similar to the two previous Wagner-Murray-Dingell bills. These definitely included a panel system, or salary basis, for physicians and *no* free choice of physicians.

History has demonstrated repeatedly what socialized medicine has accomplished in every country where it has been established: a deterioration in the quality of medical practice and a decrease in scientific progress. Great Britain, with its extensive socialized program in all fields, is the most recent example of how this program affects the individual, the public and the nation.

With a President and a Congress favorable to national compulsory health insurance, the medical profession of this country is confronted with the most critical period in its entire history. The American public is not as much interested in the medical profession as in its own personal welfare. Therefore, along with the educational program suggested by the AMA it is fully as vital to have the American public realize that socialized medicine will:

1. Affect the happiness of every family, by depriving its members of the free choice of physicians;

2. Affect the health of every family, because medical service will be inferior;

3. Affect the income of every family, because *all* earned income up to $4,800 will be taxed at least four per cent, besides additional federal tax to make up the deficit (This program will incur an annual federal expense of 5 to 10 billion dollars for the American taxpayer. The delusion that this program will furnish *free* medical care must be corrected.);

4. And, most important, socialized medicine is merely a stepping stone to further complete industrial socialization of our country.

Do you want the government to take over your business?

Full-hearted co-operation will prevent this.



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

D. P. PHYSICIANS

CONSIDERABLE newspaper publicity has been given to the disappointment of two physicians (displaced persons) who had come to this country from Europe, one to a locality in Wisconsin and another to Minnesota, expecting to practice medicine in these new locations. The unfortunate plight of most D. P.'s is deplorable, and the disappointment of these two physicians naturally appeals to the sympathy of true Americans. The unfortunate occurrence has led certain newspapers to play it up as a sob story and point the finger of blame at the medical profession—to the undoubted delight of those unfriendly to the profession.

Each state has its Board of Medical Examiners composed of physicians whose function it is to pass on the qualifications of those who are licensed to practice medicine. This is to assure that only those who have had proper training in medicine and are of sound character obtain licenses to practice the healing art. This is primarily for the protection of the public against the incompetent and dishonest doctor. We do not know of any State Examining Board that has deliberately refused to license a physician able to pass the required examinations simply to prevent competition. By and large the law of supply and demand is allowed to control the number of licensed physicians in any state.

Laws regarding the licensing of physicians differ in the different states. In some states licensing is controlled by regulations passed by the Boards of Medical Examiners. Some states require full citizenship; others require first papers; some require a year of internship in a hospital within the state; many require credentials as to medical education which are often impossible to obtain. Our boards have no way of ascertaining the worth of some credentials which have been presented by D. P.'s and in some instances those presented have proven bogus.

Medical education in certain European countries has been in a deplorable state during the past decade. Under the Nazi regime, numbers rather than quality was the objective. How can a board judge the qualifications of a physician trained in Russia? The same applies to Poland. Austrian medicine, which not so long ago represented the acme of medical training, has had no opportunity to keep abreast of the outstanding advances in therapeutics such as the use of the antibiotics.

It is said that some 6,000 D. P. physicians have entered the United States up to 1942, 3,500 of whom have been licensed. The greatest influx has been in the eastern states, notably New York and Massachusetts. Many State Boards have considered the state of D. P. physicians with much sympathy and have permitted applicants to take and retake examinations repeatedly. Actually it is much easier for a D. P. physician to obtain a license to practice in this country than for an American physician to be licensed in most foreign countries.

The first article in this issue of Minnesota Medicine contains informative material prepared by the Minnesota State Board of Medical Examiners and should be read by members so they may become posted on the subject of the licensing of displaced physicians in Minnesota. It shows that the Board has acted within its rights, as established by law, in the passing of regulations. In requiring citizenship before a physician is allowed to take examinations for licensure, the Board is not exceeding the requirements for lawyers, dentists and pharmacists. It is on this requirement that some have felt that the Board has been too exacting, and that the taking out of first citizenship papers and thus signifying the intention of becoming citizens should be sufficient. The possession of medical knowledge sufficient to pass the examinations and a good moral character should be the prime requisites for licensure. The latter may well be more difficult to determine than the former.

That 99 per cent of those examined in the past twenty-one years have passed the examinations and have been licensed does not indicate that the Board's activities have been directed towards limiting competition by unduly restricting the issuance

of licenses, a view that has been inferred by recent newspaper articles. The registration of one physician for every 700 people in the state does not suggest a great dearth of doctors in Minnesota. The problem, if any, is rather one of distribution than numbers.

Before this appears in print, the Board will have had another meeting. What action, if any, will be taken to ease the plight of D. P. physicians will have been made public. The Board's function, that only physicians with proper training and good moral character be licensed to practice, should not be interfered with by outside pressure.

INFANT MORTALITY

THE article on Minnesota's Maternal and Child Health Program by Dr. A. B. Rosenfield, Director of the Division of Maternal and Child Health of the Minnesota Department of Health, which appears in this issue reveals some facts which are not generally appreciated.

The statement that there are more deaths in the first year of life than in the age group of two to thirty-five, inclusive, is startling. Although infant mortality in Minnesota has been reduced from 70 per 1000 live births in 1915 to 28.6 in 1947, the first year of life still constitutes a hurdle for the newborn. This satisfying decrease in infant mortality has been largely affected in infants in the age period of one month to one year, which indicates that the first thirty days of life are the most hazardous.

The author's analysis of the deaths in the first month of life indicates that half are due to prematurity, an obstetrical problem. That prematurity is ninth in the list of causes of death indicates the importance of the problem. The 16.3 per cent due to birth injuries merits an analysis with the expectation of a reduction. Until we know more about the cause of congenital malformation, the 15.4 per cent due to this cause cannot be bettered.

Another point which the author emphasizes is that only 50 per cent of Minnesota children are fully immunized before entering school. The fact that twenty-five deaths from whooping cough during the first year of life occurred in 1947 and over a third of the twenty deaths from diphtheria occurred under the age of five, indicates the advisability of carrying out the immunization program against smallpox, diphtheria, whooping cough and tetanus in the first year of life.

ANTIVIVISECTIONISTS

ANTIVIVISECTIONISTS for the most part are individuals who have allowed sentimentality to outweigh their judgment. Although some of the leaders in the antivivisection society may have ulterior motives, such as personal financial gain, or possess the type of minds that are "agin" everything, it is undoubtedly true that the majority of members are swayed by the feeling that it is not right to make animals, and especially the dog, who is known as man's best friend, suffer. They do not have the full picture as to the important part played by animals in medical progress.

The public does not know the part played by the frog, guinea pig, rabbit, cat, dog and horse in medical progress. The marvelous advance in our knowledge of physiology, surgery and therapeutics would not have been possible without the experimental use of animals. The large-scale production of diphtheria antitoxin would not be possible without the use of the horse. The successful treatment of rabies utilizes the rabbit. The development of insulin would not have been possible without the use of the dog. The marvelous advances in surgery of the blood vessels, heart, lung, stomach and intestines would not have been possible were it not for trials on animals. The sulfa drugs and the new biotics, such as penicillin and streptomycin, had to be first tried out on animals. These are only some of the examples of the service rendered humanity by animal experimentation. Certainly no one could advocate experimentation, à la Hitler, on human beings.

Proponents of antivivisection do not mention the medical progress which has resulted from the experimental use of animals. They do not mention that all experimentation on animals is supervised in medical schools, for the most part, and that pain is largely minimized by anesthesia and narcotics, and that animals sent to dog pounds are uselessly slaughtered. To be consistent, they should pledge themselves never to use any therapeutic measure which has resulted from animal experimentation—insulin, liver extracts, antitoxins, penicillin, et cetera—to become vegetarians, refuse to wear fur coats and feathers.

The crusading activities of antivivisectionists have been on the increase in recent years and have acquired an estimated 10 per cent of the population in society membership. Their activities in attempting to pass legislation which would

throttle medical research have necessitated expenditures of thousands of dollars in thwarting them.

The attitude of the medical scientists in the past has been one of non-resistance, except when attempts at legislation have gone too far.

At a meeting of the Association of American Medical Colleges, held in Detroit in 1944, a committee was appointed to formulate a plan to build up public understanding and support for experimental research. As a result, in 1945 the National Society for Medical Research was founded to encourage and advance research in biology, medicine, dentistry, pharmacy and veterinary medicine, to disseminate knowledge regarding the necessity, the humane character and accomplishments of animal experimentation, and to foster research leading to prevention, control and cure of diseases in man and animals.

It was realized that there was need for a complete change of policy on the part of science from one of passivity, which meant the avoidance of even the mention of the use of animals in the interests of science, to a definitely aggressive policy, which meant the publicizing of the part played by animal experimentation. There must be an adequate and legally protected source for animals essential for experimentation. Legal action must be taken to counteract the obstructive activities of the antivivisectionists.

As a result, some 225 organizations are now supporting this new National Society for Medical Research. The society carries on a publicity campaign to acquaint the public with the true facts about the part played by animal experimentation in medical research. Newspapers, the leading lay magazines, and the radio are all being utilized. Newspapers, except for the Hearst-owned ones and the formerly Hearst-owned *Washington Times-Herald,* for the most part, have been cooperative in presenting the true picture. In the past three years, there has been a marked increase in the percentage of favorable over unfavorable newspaper articles published.

The National Society for Medical Research is a federation of scientific and civic societies formed to supply the facts about animal experimentation to the public in order to allow medical science to advance unhindered by misguided obstructionists. Members of the medical profession, as well as scientific groups, may lend their support by sending contributions to the Society at 25 East Washington Street, Chicago 2, Illinois.

RETIREMENT OFFERED MEDICAL RESERVE CORPS OFFICERS

COLONEL ROLAND S. HENDERSON, USA
Minneapolis, Minnesota

There are few members of the medical profession today who are unaware of the urgent need for their services by the Army Medical Department. As the Armed Forces expand, there has been a corresponding increase in the amount of medical services to be rendered. The Selective Service Act of 1948 provides that "no person shall be inducted until adequate provision shall have been made for medical care." The Services must meet that requirement. The Medical Department must continue to provide that medical care. To assist it in this ever-expanding task, the Medical Department has found it necessary to call for volunteers from doctors, dentists, and nurses in civilian practice.

In seeking to reinforce its professional staff, the Army has set up aggressive programs for those specialists wishing to make the military service a career, and for those choosing to assume a standby status as Reserve Officers.

Current regulations provide that commissions in the Officers Reserve Corps may be granted to doctors, dentists, and nurses who have served honorably in the Army during World War II, are able to meet the minimum physical requirements, and who have not attained their 60th birthday.

However, appointments are not limited to those with prior military service. The Department of the Army in its Circular 210, 1948, authorizes commissioning of doctors, dentists, and nurses without prior military service, provided they are licensed to practice their particular profession, can meet certain age requirements, and are physically qualified.

In any event, specialists from Minnesota may apply for their Reserve commissions through the office of the Minnesota Senior Army Instructor for the Organized Reserves, located in Room 310, U. S. Federal Office Building, Minneapolis 1, or at the nearest Organized Reserve Office.

Reservists are credited with one point per day for each day of active duty training or extended active duty, in which instance they may accumulate and receive credit for more than the 60-point maximum mentioned above.

Every year of service as a member of a reserve component prior to the enactment of the retirement act last summer is deemed to be a year of satisfactory Federal service. This is not to be construed as meaning that newly commissioned officers without prior military service are ineligible for the provisions of the Retirement Act.

To clarify the manner in which a Reserve Officer computes his retirement pay, the following example is given with the suppositions indicated:

The Reservist concerned was born in 1910 and joined

Colonel Henderson is Senior Army Instructor for the Organized Reserve Corps in Minnesota.

the Reserve Corps in 1935. He went into active Federal service December 1, 1941, and was separated December 1, 1946 (five years). He maintained a satisfactory status in the Reserves until his sixtieth birthday, 1970, at which time he was retired in the grade of Colonel.

1935 to 1941—6 years multiplied by 50 points equals (Each year of service as a member of Reserves prior to enactment of Act is deemed a year of satisfactory service for which 50 points is authorized)	300 points
1941 to 1946—5 years (active duty) multiplied by 360 equals.....(1 point for each day of active Federal service)	1,800 points

In the 24-year period, 1946 to 1970, he received retirement credit for participation in the Reserve program as follows:

He spent two years on extended active duty—360 points (1 point per day of active duty) x 2 years equals.....	720 points
One year he attended 30 authorized drill periods, and was able to attend 14 days active duty training at summer camp—15 points (for membership in reserves) plus 30 points (for attending 30 drill periods) plus 14 points (one for each day at summer camp) equals	59 points
The remaining 21 years he was able to accumulate the minimum of 50 required points per year; 21 x 50 equals.....	1,050 points
TOTAL	3,929 points

The total points divided by 360 days equal 10.9 years —the number of years creditable for retirement purposes.

$6,600.00	(Annual pay for Colonel, 30 years' service)
x .025	(Act provides that retirement pay will be paid at an annual rate equal to 2.5 per cent of the active duty annual base and longevity pay which the applicant would receive if on active duty)
$ 165.00	
x 10.9	(Years creditable for retirement)
$1,798.50	(Annual retirement pay he would receive upon attaining his sixtieth birthday.)

Newly commissioned officers have one of two alternatives following their appointment. They may volunteer for extended active duty for a period of one, two, or three years with the Army Medical Department. During the time for which they are selected, they are on full time duty status with the military service, and receive the pay and allowances of Regular Army Officers of equal rank, plus the $100 a month pay increase given to physicians and dentists who volunteer for active service.

Those not volunteering for active service with the Army may limit themselves to inactive duty training by becoming members of one of the several Medical Reserve units organized throughout Minnesota.*

Whichever the course decided upon, there are worthwhile gains for those who keep their status in the Reserve program active.

A Retirement Act passed by Congress last summer provides that those Reservists who accumulate an aggregate of at least twenty years of satisfactory Federal service as officers, warrant officers, flight officers, or enlisted persons in either the Army of the United States or the Air Force, including the reserve components thereof, and also the federally recognized National Guard prior to 1933, will be granted retired pay when they reach their sixtieth birthday. Those who were members of the reserves on or prior to August 15, 1945, must have had active service in either World War I or World War II. In order for a year to be counted as a year of satisfactory Federal service, the Reservist must have earned at least 50 points for that particular period. Fifteen of these points are automatically awarded for membership in a reserve component. The remaining required points are earned at the rate of one point for attendance at each authorized drill period, or other period of equivalent instruction. However, not more than 60 points may be credited for retirement purposes in any one year for inactive status training.

*Medical Reserve units in Minnesota include the 368th Medical Laboratory, the 364th Medical General Laboratory, 473d Medical Collecting Company, 401st Medical Base Depot Company, and the 415th Malaria Control Detachment, all of Minneapolis; the 804th Medical Hospital Center, 110th General Hospital, 803d Station Hospital, 900th Mobile Army Surgical Hospital, and the 421st Malaria Survey Detachment, all of Saint Paul, and the 467th Medical Collecting Company, with station in Brainerd.

*See note at end of article.

PHEOCHROMOCYTOMA OF THE ADRENAL

(Continued from Page 174)

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MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

NEW VERSE ADDED TO SOCIALISM'S OLD REFRAIN

Proponents of the Wagner-Murray-Dingell Bill, or variations thereof, know that, barring immediate popular acclaim, the lyrics of their national health anthem will be somewhat wearisome, if not downright unacceptable to the American public by the latter part of 1949.

So what are the sponsors of this proposal, which is making frequent return trips to Congress, doing to ease the transition from bill to law?

First of all, they have made no changes, except effective dates, in the original W-M-D Bill. This, obviously, makes further hearings an improbability and should speed the proposed legislation on its way from the committee table.

Three identical bills on national health insurance were deposited in the hopper of the 81st Congress before the session was a week old. Of the three, Representative Dingell's H. R. 783 looked the most promising to the socializers, for it had been routed to the Interstate and Foreign Commerce Committee, headed by "regular" Democrat Crosser, of Ohio.

The method of paying the nation's medical costs will be incorporated in another bill, separate from W-M-D, so that the phrasing of "free medical care for everybody" and "payroll deduction" does not contradict itself so blatantly—in juxtaposed paragraphs.

But one of the most cunning strategies employed by the politicians who would governmentalize medicine is Senator Claude Pepper's (Florida) idea of wrapping up compulsory health insurance in a package of other medical legislation, most of which would be less apt to antagonize either medical or lay people. Here's what he'd include in his omnibus bill:

1. Medical research,
2. Increased federal aid to hospital construction,
3. Federal financing of medical education,
4. Federal recruitment and training of nurses,
5. Expansion of the Public Health Service,
6. Free dental care.

Declining to comment on how well he thinks his suggestion would be received, Pepper did, however, have this uplifting thought for the day: "The 81st Congress is going to make more progress in the health field than any other congress in history. We are going to show the world that we can make democracy meaningful."

That statement, on behalf of a program more socialistic in character than even the government's stringent wartime controls, is almost perfect in its irony.

Senators Murray, Wagner and McGrath, whose bill is identical to Dingell's, claim for S.5:

That it will (1) cover 85 per cent of the population, including the self-employed and their dependents, (2) guarantee to participants medical and dental services by general practitioners and specialists, hospital and home nursing care, laboratory service, x-rays, "expensive prescribed medicines," eye glasses, et cetera, (3) guarantee free choice of physician and dentist by the patient, also the right to change, (4) make optional the participation by doctors, nurses and hospitals, including organized groups of practitioners and consumer cooperatives and "every hospital that participates is guaranteed freedom from governmental supervision or control," (5) allow the method of payment from the insurance fund "to be decided by those practitioners who furnish the service," and (6) permit members of the medical profession to participate, *along with other citizens,* in administration of the plan at the local level.

If the bill passes, it will be administered through a department that will grow out of the present federal security agency. There is some doubt about the name of the new department—it will include the words "public welfare"—but there is little doubt about who will be its director.

Oscar Ewing, present federal security administrator and chief standard-bearer for compulsory health insurance, would have, as head of the new division of the cabinet, the right to appoint his undersecretaries. It was suggested some time ago that the undersecretary for health be a licensed, qualified physician, but Mr. Ewing has expressed in no uncertain terms the course of action he would take. I want good administrators, not necessarily good doctors, in my department, he has said.

Truman and Ewing and, unfortunately, a good many others, have interpreted the election results as a green light from the people, have extracted from the ballot boxes an intangible called the will of the people and feel that no time must be lost in putting into action all the re-deal features of President Truman's (not necessarily the Democratic party's) campaign promises.

If the legislation can be rushed through before the public realizes that "free medical care" in reality means a mounting deduction from paychecks (a tax, like Social Security, to be paid partly by the employe and partly by the employer), its proponents see a better chance for its passage. In the case of self-employed persons, the entire amount of the tax must be assumed by the individual. Nor does this write "paid" across the bottom of the Nation's medical care bill. Not at all. The balance will be financed through appropriations from other tax funds, funds which accrue largely through income taxes. The bill, if it is to pass, must be shunted through Congress before the public knows what to expect of government medicine: the destruction of the time-honored doctor-patient relationship, the revocation of the right to choose a physician, the necessarily lowered quality of medical care because of a multiplying volume of patients, the mass consultations, the waiting in line, the restrictions on prescribing new and expensive drugs.

Knowing all this, Ewing fears the educational work now beginning in the AMA headquarters and designed for nation-wide application. He is doing his best, along with Boas, Falk, Davis and others, to put an unsavory label on the fund being raised by the American Medical Association to carry on this public-welfare-inspired work. They know that their flimsy promises, threadbare arguments and incoherent reasoning will not stand the strain of repeated assaults by the truth.

This, then, is the time for all good doctors to come to the aid of the public. It has a right to know the truth; we have the responsibility of telling the truth.

HEALTH INSURANCE NOT ONLY MEDICAL BILL

A number of other bills with medical significance are being brought before the 81st Congress, several of a desirable nature.

Claimed by Senator Chapman, who introduced the bill, as "the surest bulwark against socialized medicine," is S. 132 which provides for federal support to help establish adequate public health units throughout the country.

Another important piece of legislation, in the field of medical research, is S. 68 and H.R. 790, identical bills calling for a one-hundred-million-dollar federal crusade against cancer. Under the provisions of the bill, world experts would be "mobilized" and their efforts co-ordinated in an unparalleled endeavor to find the cause and cure for this disease.

Also in the interests of medical research is the filing of S. 102 and H.R. 62, which would give financial support to investigation of multiple sclerosis. S. 102 is somewhat broader than H.R. 62: it adds "and related neurological diseases," thus opening the door to accelerated study of cerebral palsy and epilepsy, for example.

Amendments are being considered for the Hill-Burton Hospital Construction Act, and there are bills in the hopper which would: authorize the commissioning of x-ray technicians in the Army and Navy, place barbiturates under the federal narcotics laws, provide for the construction of VA hospitals, one in Virginia and one in southern Texas, work toward improving the diets of low-income families by making food prices proportionate to the family's income.

SOME STATE LEGISLATION GIVEN BASIC APPROVAL

A number of bills presented to the State Legislature have received tentative medical approval. Among these are: a bill to make cancer cases reportable to the State Health Department, a proposed appropriation for a mental hygiene program, prohibition of the sale of BB guns, promotion of farm safety, increased appropriations for the Minnesota State Health Department, increased salaries for doctors, especially psychia-

trists in state mental institutions, sanitary measures approved by the State Department of Health, particularly universal milk pasteurization and the control of incorrigible tuberculosis patients.

"Keep informed; discuss and rediscuss; be on your guard," warns Dr. R. F. Erickson, chairman of the Minnesota State Medical Association's Public Policy Committee, as he indicates that doctors must ever take the initiative in recommending or disapproving legislation which could affect the health of Minnesota citizens.

STATE FARM BUREAU AIRS VIEW ON SM

"Advocates of socialized medicine should be doing some serious thinking, in view of the revelations on governmental medical service released to the public last Saturday," asserted the speaker on the Minnesota Farm Bureau radio program, December 28.

"Investigators for the Hoover commission reported, in effect," the broadcast continued, "that we have socialized medicine now, in a broad and very badly administered form."

"The federal government is assuming uncalculated obligations without any understanding of their ultimate cost, the lack of the necessary professional manpower to carry them out, or their adverse effect upon the hospital system of the country," the Farm Bureau speaker quoted from the report.

DENTAL PUBLICATION DECRIES CONTROLLED CARE

The *Fortnightly Review* of the Chicago Dental Society (January 2) has a few directly aimed words to say about the issue of compulsory health insurance:

"The plan that Mr. Ewing advocates calls for a payroll tax on employes and employers sufficient to provide about three billion dollars a year. . . He claims that his plan is not contradictory to the American system and rests upon tried insurance principles. Obviously someone is trying to pull a fast one there, for the only insurance principles Americans know about are those that call for payment of premiums by the insured that are adequate to cover benefit payments based upon experience.

"Only those persons who think that government benevolence should supplant enterprise and thrift can favor exchanging the blessings of American medicine and dentistry under a free system for the compulsory health plan now in the offing."

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul 2, Minnesota
J. F. Du Bois, M.D., Secretary

Hennepin County Farm Woman Pleads Guilty to Abortion

Re: State of Minnesota vs. Anna Powers

On December 30, 1948, Mrs. Anna Powers, fifty-eight years of age, residing on a farm near Osseo, Minnesota, entered a plea of guilty in the District Court of Hennepin County to an information charging her with the crime of abortion. Mrs. Powers, on the same date, also pleaded guilty to an information charging her with having a prior conviction for a felony. Following a statement of the facts to the Court, Judge Levi M. Hall sentenced Mrs. Powers to a term of three years in the Women's Reformatory at Shakopee, sentence being stayed and defendant placed on probation for three years.

Mrs. Powers was arrested on November 4, 1948, following a criminal abortion performed on October 6, 1948, on a twenty-three-year-old Saint Paul divorcee. Mrs. Powers was paid the sum of $250 for the abortion which was performed by the use of a catheter. Mrs. Powers, at the time of her arrest, denied any connection with the abortion, but subsequently admitted her guilt. Mrs. Powers has a previous conviction for a similar offense in 1939. On June 1, that year, Mrs. Powers entered a plea of guilty in the District Court of Hennepin County, to an information charging her with the crime of abortion. For that offense Mrs. Powers was sentenced to a term of not to exceed four years in the Women's Reformatory at Shakopee, where she served two and one-half years of the sentence. Mrs. Powers was required to serve her sentence in that case for the reason that the patient died following the abortion. Mrs. Powers stated to the Court that the abortion she performed on October 6, 1948, was the only one done by her since her release from the Women's Reformatory.

Bath Parlor Operator Convicted of Violating Massage Law

Re: State of Minnesota vs. Minnie Walker.

On October 28, 1948, Mrs. Minnie Walker, fifty-two years of age, operator of Minnie's Bath Studio at 704 Hennepin Avenue, Minneapolis, was found guilty after a trial in the Municipal Court of Minneapolis, of violating the State Massage Law. Judge Theodore B. Knutson sentenced Mrs. Walker to pay a fine of $100 or to serve thirty days in the Minneapolis Women's Detention Home. The Court granted a stay of execution of this sentence to October 1, 1949, on condition the defendant refrain from violating any of the laws of the State of Minnesota in the future.

Mrs. Walker was arrested following an investigation by Minneapolis police officers. On October 22, 1948, Inspector Eugene Bernath of the Minneapolis Police Department assigned policewoman Mary D. Maid to go to Mrs. Walker's place of business to determine what activities were being engaged in by the defendant. It was learned that Mrs. Walker was giving steam baths followed by a massage treatment. The massage treatment consisted of manual massage followed by more massage with an electric vibrator. Mrs. Walker also used an electric belt in connection with the massage treatment. The defendant charged $2.00 per treatment or seven treatments for $13.00. The defendant does not have a massage license, and the records of the State Board of Medical Examiners disclose that Mrs. Walker was given a copy of the massage law in August, 1945. The defendant lives at 1851 Englewood Avenue, Saint Paul, Minnesota.

Minnesota Department of Health

METHEMOGLOBINEMIA IN YOUNG INFANTS

For the past two years the Minnesota Department of Health has been receiving reports from Minnesota physicians of cases of methemoglobinemia in young infants fed on formulae diluted with water from farm wells containing large amounts of nitrate nitrogen. Most cases have occurred in the southwestern part of the state. To January 1, 1949, 108 cases had been recorded, with a 10 per cent mortality. Sanitary inspections of the farm wells involved indicate poor construction and evidence of contamination in practically all the wells examined.. Nitrate nitrogen content of these water supplies varies from 36 to 500 ppm. Although it is generally accepted that no water should be used in infant feeding containing more than 10 ppm of nitrate nitrogen, and a change to a municipal water supply is advised when water contains more than that amount, chemical analyses of municipal water supplies in Minnesota show that some supplies contain 10 or more ppm of nitrate nitrogen. Interestingly enough, there has been no report of any cases of methemoglobinemia in communities having municipal water supplies. Repeated periodic nitrate determinations of affected water supplies are being carried out to determine any effect of changes in weather and seasons.

Physicians have co-operated well in reporting cases, but earlier reporting is necessary to provide methemoglobin determinations to confirm diagnosis in hospitals not equipped to make this test. Blood drawn for hemoglobin determination has a chocolate tinge when methemoglobinemia exists. Physicians who note this condition are urged to notify the State Health Department at once as soon as methemoglobinemia is suspected. Telephone GLadstone 5973, Minneapolis, collect, to A. B. Rosenfield, M.D., director, Division of Maternal and Child Health, and arrangements will be made to help you confirm the diagnosis as well as to test the suspected water supply for nitrate nitrogen. This procedure is necessary because the cyanosis usually clears up in twenty-four to forty-eight hours in mild cases and, therefore, the methemoglobin determination must be done promptly.

The principal symptoms of methemoglobinemia are a gradually increasing cyanosis, lethargy, and frequently diarrhea. While the peculiar chocolate tinge of the blood is presumptive evidence, confirmation of the diagnosis requires a methemoglobin determination of the blood. Infants under the age of two months appear to be the ones most usually affected.

The condition must be differentiated from enlarged thymus, congenital cardiac conditions, other congenital tracheal or pulmonary conditions, as well as acute pulmonary conditions and the ingestion of other toxic materials.

Ceasing to use the suspected water for the infant's formula and changing to a safe municipal supply will usually be sufficient to clear up mild cases. Oxygen has been used by many physicians. In severe cases, 1 per cent methylene blue intravenously, 1.0-2.0 mg. per kilogram, produces excellent results.

We are anxious to determine whether this condition occurs in other parts of Minnesota as well as in the southwestern area of the state. Physicians are therefore urged to report by mail the names and addresses of any possible cases that may have occurred in their practice during the past two years, so that sanitary surveys and chemical analyses of suspected water supplies may be made. We shall be glad to call on any physician who may be interested in discussing this subject.

IMMUNIZATION INFORMATION FOR TRAVELERS ABROAD

The following information is quoted from a pamphlet recently prepared by the United States Public Health Service giving information needed by persons proceeding abroad. Such persons are now required to carry certificates of immunization certified by medical health officers.

1. *United States Requirements.*—In the absence of unusual outbreaks of disease, the United States has no immunization requirements for persons leaving the United States, except as may be required for military personnel and dependents.

The Foreign Quarantine Regulations of the United States, however, require that all persons, both American citizens and nationals of other countries, prior to admission to the United States from abroad, present a certificate (see point 6 below) showing satisfactory evidence of vaccination against smallpox within three years prior to arrival or evidence of a previous attack of smallpox. Persons not presenting such proof may be subjected to penalties and required to submit to vaccination or be held under observation for fourteen days.

In the absence of smallpox at the port of departure or on board the carrier, persons are exempt from this requirement when they depart from Canada, Newfoundland, the Island of St. Pierre or Miquelon, Iceland, Greenland, the West Coast of Lower California, Cuba, the Bahama Islands, the Canal Zone, or the Bermuda Islands.

2. *Requirements of Foreign Countries.*—As a result of international and local regulations, travelers to foreign countries may be required to show proof of inoculation against smallpox, yellow fever, typhus, and cholera. These requirements depend primarily on the prevalence of the four diseases in the countries visited or traveled through prior to arrival at each port of entry. It is recommended, therefore, that persons traveling to or through the countries listed in Annex I obtain immunizations against the diseases listed for these countries.

Because of the present world-wide situation with respect to smallpox and of the United States Foreign

Quarantine Regulation, it is recommended that travelers to any foreign country be vaccinated against smallpox.

In order to avoid delays and inconveniences abroad, immunizations should be obtained before departure from the United States. For each immunization an appropriate International Certificate of Inoculation and Vaccination should be obtained (see point 6 below). This should be carried by the traveler and shown to Quarantine Officers when proof of immunization against the above listed diseases is demanded.

3. *Other Immunization Precautions.*—For protection against additional hazards incident to travel in foreign countries it is recommended that certain other immunization precautions be taken:

(a) Every person proceeding abroad should be immunized against typhoid and paratyphoid fevers.

(b) Persons whose work may present danger of accidents or piercing or crushing wounds should be immunized against tetanus.

(c) Children under fifteen years of age proceeding to any overseas area should be immunized against diphtheria. Schick test is recommended for all adults under thirty-five years of age. If the reaction is positive, immunization against diphtheria is advised.

4. *Where to Get Immunizations.*—The following persons may get free immunizations at United States Public Health Service Stations:

(a) Legal beneficiaries of the Public Health Service.

(b) United States Government officers, employes, and their dependents leaving for foreign areas when traveling under official orders.

(c) Dependents of Army, Air Force, Navy, and Marine Corps personnel traveling under official orders to foreign countries. These individuals may also be immunized at Army and Navy medical installations.

(d) Any person requiring immunization for yellow fever. The list of Public Health Service Stations administering yellow fever vaccine is attached (Annex 2).

Any traveler not covered in items 4 (a) (b) (c) or (d) above, may get immunizations (except for yellow fever) from private physicians or, in some instances, at State or local health departments.

Yellow fever vaccine cannot be obtained by private physicians and must be administered by Public Health service personnel. The nearest station for obtaining yellow fever vaccination by Minnesota citizens is the U. S. Marine Hospital, 4141 Clarendon Avenue, Chicago.

5. *Time Required for Immunizations.*—(a) Immunizations requiring International Certificate:

Smallpox: The vaccination should be obtained at least fourteen days prior to leaving the country. The reaction at the site of the vaccination should be carefully observed and recorded on the third and ninth days after vaccination. The International Certificate of Vaccination against Smallpox is valid for only three years.

Yellow fever: The inoculation should be obtained at least ten days prior to leaving the country. A single inoculation is required. The International Certificate of Inoculation against Yellow Fever becomes valid on the tenth day after date of inoculation and remains valid for four years from that date.

Note: Yellow fever vaccine should not be given concurrently with smallpox vaccine. When both of these vaccinations are to be done, it is suggested that the yellow fever vaccine be given first and that at least five days elapse before the smallpox vaccination is done.

Cholera: Inoculations should be commenced fourteen to twenty days prior to leaving the country. The standard course of inoculations consists of two doses at a seven- to ten-day interval; a third dose is advisable. It is recommended that booster doses be obtained at four- to six-month intervals as long as the danger of cholera is present. The International Certificate of Inoculation against Cholera is valid for only six months from date of last inoculation.

Typhus: Inoculations should be commenced fourteen to twenty days prior to leaving the country. The standard course of inoculations consists of two doses at a seven- to ten-day interval. A booster dose is recommended at six-month intervals as long as danger of typhus is present. The International Certificate of Inoculation against Typhus is valid for only one year from date of last inoculation.

(b) Immunizations not requiring International Certificate:

Typhoid and Paratyphoid: The standard course of inoculations is three doses at intervals of from seven to ten days. A booster dose is recommended annually and whenever the diseases are prevalent. If more than one year has elapsed since the last series of immunizations or the last booster dose, the standard course should be repeated.

Tetanus: The standard course with alum-precipitated toxoid consisting of two doses at four- to six-week intervals is preferred; with plain toxoid, three doses at three- to four-week intervals. Booster doses are recommended one year after initial series and at five-year intervals thereafter; also at time of injury.

6. *International Certificate of Inoculation and Vaccination.*—A properly executed International Certificate of Inoculation and Vaccination should be used as proof of immunization against smallpox, yellow fever, typhus, and cholera. This certificate to be valid must be certified by:

(a) A Medical Officer of the Public Health Service at any Marine Hospital, Public Health Service Relief Station, Dispensary, or Foreign Quarantine and Immigration Station, or

(b) The local health officer, if a physician, of the area in which the private physician administering the immunization practices, or by the State health officer where there is no local officer.

(c) In the case of personnel traveling under the cognizance of U. S. Navy, U. S. Army, or U. S. Air Forces,

(Continued on Page 198)

BRONCHIAL ASTHMA



"Aminophyllin has in recent years taken a definite place in the armamentarium of asthmatic medication. Physiologically it acts by relaxing the bronchial muscles. It is also extremely valuable in relieving patients of an adrenalin fastness and is less contraindicated in cases with cardiac disorders or hypertension."[1]

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*Searle Aminophyllin contains at least 80% of anhydrous theophylline. G. D. Searle & Co., Chicago 80, Illinois.

SEARLE RESEARCH IN THE SERVICE OF MEDICINE

1. Mountain, G. E.: Bronchial Asthma, J. Iowa M. Soc. *35*:324 (Aug.) 1945.

immunization and certification may be done by commissioned medical officers of these services.

Persons receiving their immunization from a private physician will take the certificate to the physician who will enter the person's name, age, sex, the origin and batch number of the material used, and dates of inoculation. For smallpox vaccinations, the physician must also enter the dates of inspection of the vaccination and the result. The prospective traveler must then take the certificate to the State or local health officer for certification.

The Passport Division of the Department of State will enclose a blank certificate in the envelope with the traveler's passport. In the event the certificate is lost or more are required, additional blanks may be obtained from:

(a) The Passport Division, Department of State, Washington 25, D.C., or

(b) The Headquarters, District Offices, Marine Hospitals, and Quarantine Stations of the Public Health Service.

(c) In Minnesota, the Minnesota Department of Health, University Campus, Minneapolis.

CANCER DETECTION CLINIC

More than half of the 292 persons examined by physicians at the cancer detection clinic held in St. Cloud in December, 1948, were found to be in need of medical care. A total of 166 persons were advised to obtain further examination and treatment from their own physicians. The one-day detection clinic at St. Cloud was sponsored by the Stearns-Benton County Medical Society, the Cancer Committee of the State Medical Society, and the Minnesota Division of the American Cancer Society.

Cancerous or precancerous conditions were found in thirty-eight of the persons examined. Other conditions included seventeen cases of hypertension, thirteen cases of keratosis, five or more cases of cystocele, cervical polyp, and cervical erosion, and three or more cases of umbilical mass, hemorrhoids, lipoma of the chest, rectocele, cervical ulceration or laceration, vaginal discharge, and vaginitis.

Females examined numbered 213, males seventy-nine. Ages ranged from twenty to over seventy. There were seventeen different nationalities represented.

Annex I

Immunization Precautions.—As a result of international or local regulations, travelers may be required to show satisfactory proof of immunity to smallpox, yellow fever, typhus and cholera. Persons proceeding to or through the countries listed below should obtain the immunizations recommended for those countries and should also obtain a properly executed International Certificate of Inoculation and Vaccination which should be shown to Quarantine Officers when proof of immunization against these four diseases is demanded.

ANNEX I. IMMUNIZATIONS REQUIRED BY VARIOUS COUNTRIES

(S = smallpox	Y = yellow fever		C = cholera	T = typhus)	
Afghanistan	S,C,T	Germany	S	New Zealand	S
Algeria	S,T	Gold Coast (Br.)	S,Y,T	Nicaragua	S
Ang.-Egy. Sudan	S,Y,C,T	Gt. Britain	S	Nigeria (Br.)	S,Y,T
Angola (Port.)	S,Y,T	Greece	S,T	Norway	S,T
Antigua (Br.)	S	Greenland	S*	Nova Scotia	S*
Arabia	S,C,T	Guatemala	S,T	Pakistan	S,C,T
Argentina	S,Y	Guiana, Br.	S,Y	Palestine	S,C,T
Aruba (Neth.)	S,Y	Guiana, Fr.	S,Y	Panama	S,Y
Ascension Is. (Br.)	S	Guiana, Neth.	S,Y	Panama Canal Zone	S
Australia	S	Haiti	S	Paraguay	S,Y
Austria	S	Hong Kong	S,C,T	Peru	S,Y,T
Azores (Port.)	S,T	Honduras	S,T	Philippine Is.	S,C
Bahamas, B. W. I.	S*	Honduras, Br.	S,T	Poland	S,T
Barbados, B. W. I.	S	Hungary	S,T	Portugal	S
Belgium	S	Iceland	S*	Port. E. Africa	S,Y,T
Belgian Congo	S,Y,T	India	S,C,T	Rhodesia, North	S,Y,T
Bermuda	S*	Iran	S,C,T	Rhodesia, South	S,T
Bolivia	S,Y,T	Iraq (Mesop.)	S,C,T	Rumania	S,T
Brazil	S,Y	Ireland	S	Ryukyus	S,C
Bulgaria	S,T	Italy	S	Santa Lucia (Br.)	S
Burma (Br.)	S,C,T	Ivory Coast (F.)	S,Y,T	St. Pierre-Miquelon	S*
Canada	S*	Jamaica	S	Salvador	S
Canal Zone	S*	Japan	S,C,T	Saudi Arabia	S,C,T
Chile	S,Y,T	Kenya (Br.)	S,Y,C,T	Scotland	S
Chosen (Korea)	S,C,T	Korea	S,C,T	Senegal (Fr.)	S,Y,T
China	S,C,T	Latvia	S,T	Siam (Thailand)	S,C,T
Colombia	S,Y,T	Lebanon	S,C,T	Sierra Leon (Br.)	S,Y,T
Costa Rica	S	Liberia	S,Y,T	Spain	S
Cuba	S*	Libya	S,C,T	Straits Sett.	S,C,T
Curacao (Neth.)	S,Y	Liechtenstein	S	Surinam (Neth.)	S,Y
Czechoslovakia	S,T	Lithuania	S,T	Sweden	S,T
Denmark	S	Luxembourg	S	Switzerland	S
Dom. Republic	S	Madagascar (F.)	S,Y,C,T	Syria	S,C,T
Ecuador	S,Y,T	Martinique	S	Tahiti (Fr.)	S
Egypt	S,C,T	Mesopotamia	S,C,T	Tanganyika (Br.)	S,Y,C,T
Eire	S	Mexico	S,T	Thailand	S,C,T
El Salvador	S	Montenegro (Y.)	S,T	Trinidad, B. W. I.	S,Y
Estonia	S,T	Morocco	S,C,T	Turkey	S,C,T
Ethiopia	S,Y,C,T	Monaco	S	U. of So. Africa	S,T
Finland	S,T	Mozambique (P. E. A.)	S,Y,C,T	U. of S. S. R.	S,C,T
France	S	Netherlands, E. I.	S,C,T	Uruguay	S,Y
F. E. Africa	S,Y,T	New Caledonia (Fr.)	S	Venezuela	S,Y,T
F. I. China	S,C,T	Newfoundland	S*	Virgin Is. (Br.)	S
F. W. Africa	S,Y,T	Netherlands	S	Wales	S
				Yugoslavia	S,T

*In the absence of smallpox at the port of departure or aboard the carrier, persons departing from Canada, Newfoundland, the Island of St. Pierre or Miquelon, Cuba, the Bahama Islands, Canal Zone or the Bermuda Islands and coming directly to a port under the control of the United States are exempt from Foreign Quarantine Regulation 71.87 (b) which requires persons entering the United States from abroad to present a certificate showing successful vaccination against smallpox within three years prior to arrival.

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NATIONAL CANCER GRANTS

National Cancer Institute grants of $810,956 for cancer control projects and for cancer teaching in medical and dental schools have been announced by Oscar R. Ewing, Federal Security Administrator. The awards were approved by Dr. Leonard A. Scheele, Surgeon General of the Public Health Service, and had been recommended by the National Advisory Cancer Council, a group of non-government cancer experts.

Eleven grants for cancer control, totalling $202,417, went to non-federal institutions and agencies to support studies of cancer diagnostic tests, occupational cancer, tumor pathology, cancer teaching methods, and other special control projects. Grants to continue cancer teaching of undergraduates went to twenty-three medical schools and nine dental schools, and totalled $608,538.

AMERICAN BOARD OF OPHTHALMOLOGY

The American Board of Ophthalmology announces that it does not evaluate, approve, or disapprove any ophthalmic residency toward fulfilling the requirements for candidates for board examinations. Any candidate who qualifies for the board examination and completes the prerequisites as outlined in the booklet of information will be accepted. A copy of this booklet can be obtained from the Secretary of the American Board of Ophthalmology, 56 Ivie Road, Cape Cottage, Maine.

* * *

CHICAGO MEDICAL SOCIETY

The fifth Clinical Conference sponsored by the Chicago Medical Society will be held at the Palmer House, Chicago, March 1, 2, 3, and 4, 1949.

The conference comprises a four-day intensive postgraduate course for the general practitioner and will be presented by outstanding clinicians from numerous medical centers. Newer methods of diagnosis and treatment will be included in the scientific program, and scientific and technical exhibits of the highest quality will be displayed.

The registration fee of $5.00 should be sent to the Chicago Medical Society, 30 N. Michigan Avenue, Chicago 2, Illinois.

* * *

CONTINUATION COURSES

The University of Minnesota announces a continuation course in Proctology to be presented at the Center for Continuation Study for one week, April 11 through 16, 1949. The course is intended for doctors of medicine who are engaged in general practice. Emphasis will be placed upon those aspects of proctology which are of particular concern to the general physician. Presentation will be by means of lectures, discussions, motion pictures and operating room demonstrations. Enrollment will be limited to 20.

A continuation course in Physical Medicine will be presented at the Center for Continuation Study on March 28, 29 and 30, 1949. The course is intended for doctors of medicine who are engaged in general practice. The various forms of physical therapy will be discussed and the indications, contraindications, dangers, and limitations will be emphasized. Special emphasis will be placed upon the role of physical medicine in such conditions as arthritis, fractures, and various psychosomatic disturbances. Faculty for the course will include members of the staff of the University of Minnesota Medical School and the Mayo Foundation.

A continuation course in Pediatrics will be presented at the Center for Continuation Study on April 7, 8, and 9, 1949. The course is intended for doctors of medicine who are specializing in Pediatrics. The first day of the course will be devoted to problems of allergy in pediatric practice. Emphasis will be placed upon diagnosis and management of hay fever, asthma, and skin allergy. Immunological concepts will be emphasized. An evaluation of the newer drugs will also be presented. Two days of the course will be devoted to infectious diseases in pediatric practice. Subjects to be presented include common respiratory diseases, toxoplasmosis, histoplasmosis, tuberculosis, and rheumatic fever. Faculty for the course will be made up of members of the staff of the University of Minnesota, Mayo Foundation, and distinguished visiting physicians from other medical centers.

* * *

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

A meeting of the Minnesota Society of Neurology and Psychiatry was held at the Town and Country Club, Saint Paul, on January 11. Two papers were presented on the scientific program. Dr. Collin S. MacCarty, Rochester, presented his inaugural thesis on "Thoracic, Lumbar and Sacral Cordectomy." Dr. Robert Fawcett and Dr. Reynold A. Jensen, of the University of Minnesota, presented a paper on "Gasoline Addiction in a Child."

FREEBORN COUNTY SOCIETY

Re-election of Dr. S. A. Whitson, Albert Lea, as president, marked the annual meeting of the Freeborn County Medical Society in Albert Lea on December 9. Also elected to office were Dr. M. O. Nesheim, Emmons, vice president; Dr. R. A. Demo, Albert Lea, treasurer, and Dr. E. S. Palmerton, Albert Lea, secretary. Featured on the evening program were motion pictures taken by Dr. B. A. Leopard, Albert Lea, during a trip through Central America.

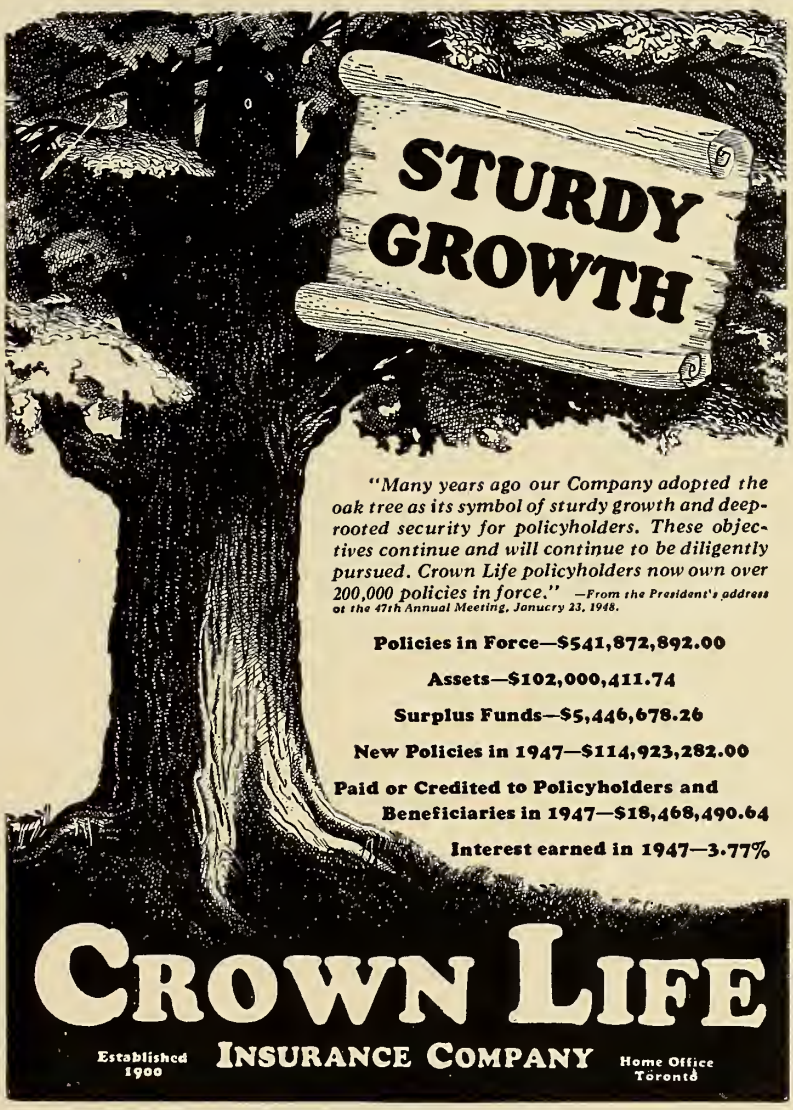
BLUE EARTH COUNTY SOCIETY

At the annual meeting of the Blue Earth County Medical Society, held in Mankato during the last week of December, Dr. A. A. Schmitz, Mankato, was elected

(Continued on Page 202)

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(Continued from Page 200)

president of the organization. Other officers named at the meeting were Dr. R. W. Kearney, vice president, and Dr. O. H. Jones, secretary-treasurer, both of Mankato.

PARK REGION SOCIETY

The Park Region Medical Society held its annual meeting at Fergus Falls on December 4. The following officers were elected: Dr. H. K. Helseth, president; Dr. George C. Jacobs, president-elect; Dr. L. A. Dwinnell, vice president; Dr. Ralph Estrem, secretary, and Dr. W. O. B. Nelson, treasurer, all of Fergus Falls.

RANGE MEDICAL SOCIETY

At a meeting of the Range Medical Society in Chisholm early in January, Dr. T. A. Estrem of Hibbing was elected president of the group. Dr. Sidney Blackmore, Keewatin, was named vice president, and Dr. R. E. Hansen, Hibbing, secretary-treasurer. Talks by Dr. M. G. Gillespie and Dr. H. G. Moehring, of the Duluth Clinic, were presented during the scientific program.

ST. LOUIS COUNTY SOCIETY

At the annual meeting of the St. Louis County Medical Society in Duluth on December 8, Dr. M. H. Tibbetts, Duluth, assumed the office of president, to succeed Dr. P. S. Rudie, Duluth. Named as president-elect of the organization was Dr. L. R. Gowan, Duluth, who will serve in 1950. Other officers elected were Dr. W. F. Neff, Virginia, vice president, and Dr. K. E. Johnson, Duluth, secretary-treasurer. As part of the evening program Dr. Vernon D. E. Smith, Saint Paul, showed motion pictures of duck hunting, skiing, big game hunting and Alaskan fishing.

STEARNS-BENTON COUNTY SOCIETY

Dr. S. T. Raetz, Maple Lake, was named president of the Stearns-Benton County Medical Society at a meeting held in St. Cloud on December 16. Other officers elected were Dr. R. C. Smith, Holdingford, vice president, and Dr. J. N. Libert, St. Cloud, secretary-treasurer.

Following the election of officers, the society members attended a lecture at the St. Cloud Veterans Hospital where Dr. J. S. Cartney, Minneapolis, spoke on "Embolism of the Lungs."

WASHINGTON COUNTY MEDICAL SOCIETY

At the regular monthly meeting of the Washington County Medical Society, January 11, 1949, Dr. K. H. Pfuetze, Superintendent of the Mineral Springs Sanatorium, Cannon Falls, conducted a general discussion regarding follow-up, by private physicians, of individuals whose films in the x-ray survey indicated abnormality.

Dr. Richard A. Knudson, an associate of Dr. J. A. Poirier, Forest Lake, was elected a member of the society.

MEDICAL BROADCAST

The Minnesota Department of Health inaugurated its first regular series of radio programs on Monday, February 14. The programs will be given at 11:15 every Monday morning over Station KUOM in the Twin Cities.

Dr. Robert N. Barr, chief of the Health Department's Section of Maternal and Child Health, has taken over the KUOM radio spot left vacant by the departure of Dr. Donald A. Dukelow for a position with the American Medical Association in Chicago. Dr. Barr was introduced to his radio audience by Dr. Dukelow on the broadcast of February 14.

Dr. Barr's program subjects for the next few weeks will be:

Feb. 21—What Is Mental Health?
Feb. 28—Public Health Bills in Congress.
Mar. 7—It's Your Health Department.
Mar. 14—Health Days and Health Councils
Mar. 21—Why Vital Statistics?
Mar. 28—Tracking Down Epidemics.

CASE RECORD OF ST. MARY'S HOSPITAL, DULUTH

(Continued from Page 176)

be unassociated with systemic diseases such as diabetes or tuberculosis, (2) the ulcer must be seen by esophagoscopy or at necropsy; (3) free gastric hydrochloric acid must be present; (4) the ulcer must be chronic, and (5) the symptoms must be relieved by peptic ulcer therapy and dilatation.

The complications of such ulcers are hemorrhage or perforation or both. In some reports a differentiation is made between perforation above or below the diaphragm. One such series classed all perforations above the diaphragm as fatal. The pleural and pericardial cavities, the aorta, the lungs and the mediastinum are all vulnerable to a perforation above the diaphragm. A perforation below the diaphragm usually causes peritonitis of the lesser peritoneal sac or involves the entire peritoneal cavity. In the case presented, the perforation was above the diaphragm and involved both pleural cavities, both lungs, the pericardial sac and the mediastinum, thence into the peritoneal cavity.

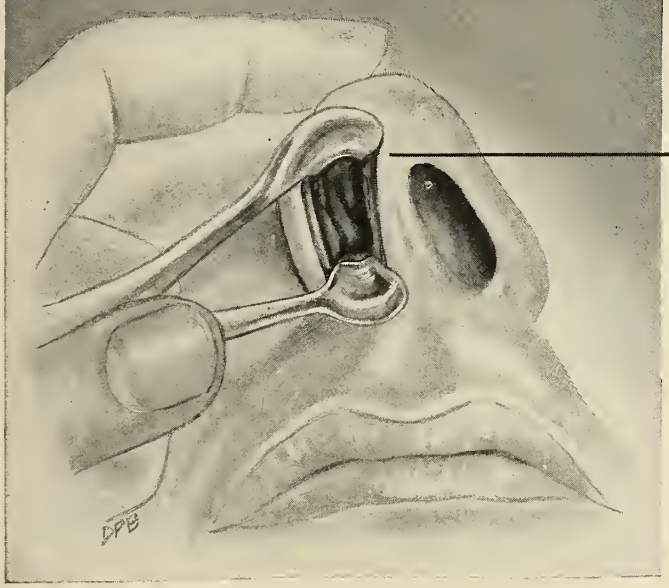
Questions

Dr. H. G. Moehring (Roentgenologist): Was there any opportunity for x-ray studies to identify any subdiaphragmatic effusion or accumulation?

Dr. A. J. Spang (Surgeon): Were any blood amylase studies made?

Dr. E. L. Tuohy: The answer to both questions is "no." Dr. Barron has given a masterly analysis of the sequences here shown. Students and practitioners have long been indebted to him for his teaching zeal. As he has well said, "Whether I am right or wrong in my specific deductions, I assert that the method of analysis is correct, and that is the only credit I accept."

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Woman's Auxiliary

OUTSTANDING SPEAKERS AT NATIONAL AUXILIARY SESSION

Mrs. Harold Wahlquist
State Auxiliary President

The fifth annual conference of national committee chairmen, state presidents and presidents-elect was held by the Woman's Auxiliary to the American Medical Association, November 4 and 5, in Chicago. These conferences are valuable to both president and president-elect: the former benefits by being reactivated with enthusiasm for her job and by gathering many ideas and suggestions with which to supplement the work of her year; the latter, by getting her first insight into the magnitude of the work that can be done by Auxiliary members.

The conference lasted two days. Its schedule has become rather fixed after experimentation these last several years. Mrs. Luther Kice, national president, read the call to order, welcomed members and guests and presented Mrs. David Allman, president-elect and chairman of the conference. Following the election of the secretary and appointment of the Recommendations committee, the secretary called the roll, finding twenty-eight presidents, twenty presidents-elect and six standing committee chairmen present. Fourteen national officers were guests.

With preliminaries out of the way, members settled down for hours of work and study. National chairmen presented their recommendations and problems; speakers from AMA, invaluable as sources of authentic information, appeared at intervals. Relaxation came in the form of carefully planned luncheons, at which members of the executive committee of the AMA Board of Trustees were Auxiliary guests.

Toward the end of the first day, presidents began reporting, and this interchange of information alone could have made the conference worthwhile. Activities of the state units varied greatly; many specialize year after year in certain projects, with resultant perfected techniques.

Delegates had an opportunity to talk informally and to become acquainted at an evening dinner, scheduled for the first time this year. The Hawaiian Medical Society sent each member an orchid, via the president of the Hawaiian Auxiliary.

The reading of recommendations by the chairman of this committee concluded the business of the conference.

The speakers (whose talks will be summarized in a later issue) were outstanding. Fred V. Hein, Ph.D., the AMA's consultant on physical fitness at that time, spoke on "School Health Problems"; William Doscher, assistant director of public relations, AMA, "Auxiliary Public Relations"; Frank G. Dickinson, Ph.D., director of the AMA Bureau of Medical Economic Research, "Medical Economics in Relation to the Woman's Auxiliary"; Arthur Conrad, assistant administrator, National Physicians committee, "The Forces Behind the Drive for Socialized Medicine and Education"; Thomas A. Hendricks, secretary, AMA Council on Medical Care, "The Hoover Commission."

The Auxiliary was specially indebted to Dr. Louis H. Bauer, vice chairman of the AMA Board of Trustees, for his pertinent talk on the World Medical Association and the World Health Organization, which is a branch of UN, government supported, representing health organizations of twenty-nine countries. He expressed the feeling that the two organizations could complement each other and work together in harmony.

DRAFT REJECTIONS PROVE EXCELLENCE OF MEDICAL CARE

Mrs. Elmer Rusten
State Legislative Chairman

Fact-hungry United States, a nation with a commendable "prove it to me" attitude, has been struggling since World War II to engorge some pretty unpalatable statistics—figures and percentages which emerged from Selective Service operations and have been framed as an indictment of the medical profession.

In essence, the report of the propagandists for socialized medicine is that 36 per cent of all eligible young men examined by Selective Service boards was found to be physically unfit for military service.

With more twisted statistics, they have explained this huge rejection rate as resulting from the fact that one-third of the people, those in the low-income group, were more subject to sickness and unable to pay for adequate medical care.

The truth, revealed by Dr. Maurice H. Friedman's investigations, is that *only a fraction of one per cent* of total rejections could have resulted from the unavailability or the cost of medical care. Here is how his analysis whittled down the 36 per cent figure:

"Between December 7, 1941, and December 31, 1943, the draft boards selected about 10 million men for examination, and of these about 3.6 million were rejected, i.e., a rejection rate of about 36 per cent. During this period, however, 2.7 million men voluntarily enlisted in the armed forces. If these men had gone through the Selective Service examination, the total number of men examined would have been 12.7 million, and the rejection rate, 28.4 per cent."†

A full 20 per cent of these rejections was for conditions not medical—illiteracy, mental deficiency and syphilis, for example! This lowers the 28.4 per cent still further: to 22.7 per cent.

Diseases not preventable and not remediable—mental

(Continued on Page 206)

†Friedman, testimony before the Sub-committee on Health of the United States Senate Committee on Labor and Public Welfare.



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disease, heart conditions, congenital defects, defective vision, overweight, underweight—accounted for approximately 45 per cent of the rejections, putting the figure down another notch, to 9.92 per cent. Diseases or conditions not preventable, but correctable, added up to 16 per cent of the total rejections and subtracting them from the total leaves 5.42 per cent of the rejections having possible medical care implications.

The percentage dwindles to a fraction of 1 per cent in the light of one of the most important discoveries Dr. Friedman made: one rejectee could be counted as five! In other words, a man called and rejected each time the standards were changed was counted as a separate rejection each time he appeared for examination. There were tens of thousands of such duplicate rejections, Friedman declares.

Instead of viewing the rejection figures as a condemnation of the medical care system in this country, Dr. Friedman asserts that they prove the universality and effectiveness of the system. "There were men with one hand or one leg, some with arrested cases of tuberculosis or diabetes, others with punctured ear drums or one eye. These men, though incomplete, were active, useful human beings. They were men—not corpses in graveyards due to medical inattention. One and all they were living testimony of the availability of medical care and the competency of American physicians."

BROADER AUXILIARY PROGRAM: FUNDS NEEDED

Mrs. George Penn
State Treasurer

Never before in the history of medicine has it been so important for the Woman's Auxiliary to have a progressive and forward-looking public relations program. The AMA is asking more assistance from the Auxiliary, and as a result, activities are outdistancing finances. One secretary, for example, cannot keep up with the duties assigned to her; the budget of the national president has been increased, because traveling expenses have risen and the AMA is eager for her to attend as many meetings as possible.

Fulfilling national obligations without going into debt cannot be done without additional funds. At the Board of Directors' meeting held recently in Chicago, the Corinne Keen Freeman fund had to be transferred to the checking account so that current expenses could be met.

Last June, at the annual national meeting, the House of Delegates revised the national dues from 25 cents to $1 per member, believing that every member of the Auxiliary would voluntarily subscribe 75 cents more for the important work that the Auxiliary has set out to do.

State dues remain the same—25 cents, while county auxiliaries determine individually the amount of dues necessary.

By this time county auxiliary treasurers have received their forms and membership cards, relayed to them from the national treasurer by the state treasurer. (This work is all on a volunteer basis.) County treasurers then remit all membership dues by *March 15* to the

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state. The national fiscal year ends March 31, at which time all dues and reports must be received by the national treasurer. It is difficult for some counties to meet this March 15 deadline, in view of the variance of county fiscal dates: in Minnesota, with twenty-eight organized auxiliaries there was a variation of 10 fiscal dates.

Last year total Auxiliary membership in Minnesota was 1,632, including twenty-members-at-large. In counties where auxiliaries are not organized, wives of physicians in good standing may become members-at-large. Wives of physicians who are members of their county societies and widows of physicians who are in good standing at the time of death, are eligible for membership.

HENNEPIN AUXILIARY CHANNELS FUND TO MENTAL HYGIENE WORK

Mrs. R. F. Erickson

In addition to its customary philanthropies, the Hennepin County Auxiliary has voted to donate $500 to the Minnesota Mental Hygiene Society. Financial needs of this organization at the present time, plus the interest of Governor Youngdahl and the public, influenced the Auxiliary in its decision.

After analyzing the work of this society, the members agreed that financial support was only the beginning; voluntary service is needed too, particularly in educating the public to the care and treatment of mental patients.

Dr. R. F. Erickson and Mrs. Elmer Rusten discussed proposed state and national medical legislation at the January luncheon and legislative day of the Hennepin County Auxiliary. Interest generated by the meeting has led to the planning of a series of round-table discussions on pending legislation.

NICOLLET-LE SUEUR GROUP TO AID HEART FUND DRIVE

At the November 29 business meeting, the Nicollet-Le Sueur Auxiliary agreed to aid the Minnesota Heart Association in its drive, slated for February 7 to February 28. The doctors' wives were to distribute plastic heart-shaped containers for collections throughout the two counties.

Progress on the year's program was recounted; the auxiliary is continuing its work in medical and surgical relief, cancer dressings, the sale of *Hygeia,* and the tuberculosis essay contest.

Mrs. Lawrence Sjostrom, St. Peter, has been chosen as a member of the State Cancer Board.

RENVILLE AUXILIARY JUDGES TUBERCULOSIS ESSAYS

Tuberculosis essays were judged at the December 14 meeting of the Renville Auxiliary, with the $5 prize going to a Bird Island girl.

The Auxiliary and Medical Society meetings were held concurrently, the Auxiliary members meeting at the Olivia Sweet Shop for dinner.

In Memoriam

HARRY FREDRICK BAYARD

Dr. H. F. Bayard of Minneapolis died on January 14, 1949, at the age of fifty-one.

Dr. Bayard was born in St. Paul March 14, 1897. He received his medical degree from the University of Minnesota Medical School in 1921 and interned at Minneapolis General Hospital.

After practicing at Stewartville, Minnesota, from 1923 to 1928, he took postgraduate work in proctology at the Mayo Foundation, Rochester, and began practicing his specialty in Minneapolis in 1931.

He was Assistant in Surgery on the Proctological Outpatient Service at the University of Minnesota and was a staff member at St. Barnabas Hospital.

He was a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations, the American College of Surgeons, the Alpha Kappa Kappa medical fraternity and Phi Sigma Kappa.

Dr. Bayard is survived by his wife, Florence L., his mother, Mrs. F. L. Bayard of Minneapolis, four sisters, and two brothers.

ALFRED HOFF

Dr. Alfred Hoff, well-known internist of Saint, Paul, died suddenly October 9, 1948, at his home, following an illness of several months.

Alfred Hoff was born March 9, 1883, in Saint Paul. He received his preliminary education in the schools of Saint Paul and was graduated from Cleveland High School in 1901. After working in the auditing department of the Northern Pacific Railroad for a time, he enrolled in the University of Minnesota, receiving his Bachelor of Science degree in 1908 and his Doctor of Medicine in 1910. He was a member of the Nu Sigma Nu fraternity and was elected to the Sigma Xi and Alpha Omega Alpha honorary fraternities.

Dr. Hoff served his internship at the City and County Hospital 1910-1911 and continued his connection with this hospital in various capacities, having been chief of the section in medicine and a member of the intern committee at the time of his death. In 1926, he took postgraduate work at the University of Vienna. On returning to Saint Paul, he confined his practice to internal medicine.

Dr. Hoff served as chief of staff of St. Luke's Hospital and was a member of the board of directors of this hospital. He was a Fellow of the American College of Physicians, certified by the American Board of Internal Medicine and also a member of Ramsey County Medical Society, the Minnesota State Medical Associa-

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tion and American Medical Association. He was a member of the Minnesota Society of Internal Medicine and of the Minnesota Academy of Medicine.

Dr. Hoff was married December 1, 1926 to Miss Marjorie Monkhouse. He is survived by his wife, son, John, and daughter, Mary Patricia; also two sisters and one brother.

Dr. Hoff was an ardent student in many phases of medicine. He devoted considerable time to the training of the intern staff and nurses of the Ancker and St. Luke's Hospitals. He was held in respect and esteem by his associates for his professional ability and integrity.

C. K. WILLIAMS, M.D.
E. V. GOLTZ, M.D.

J. ARTHUR JOHNSON

Dr. J. Arthur Johnson of Saint Paul passed away after a protracted illness at Mounds Park Hospital on November 10, 1948, at the age of fifty-four.

Arthur Johnson was born in Saint Paul on December 20, 1893. He attended Johnson High School in Saint Paul, but was forced to leave because of illness. He later received his high school diploma at Minnesota College in Minneapolis. He attended the University of Minnesota, where he received his B.S. degree. He completed his medical education in 1927 and was graduated with honors, and interned at Ancker Hospital in Saint Paul.

He was a member of Phi Chi medical fraternity and A. O. A. honorary medical fraternity. While obtaining his education, Dr. Johnson supported himself as a male nurse at Gillette and Mounds Park Hospitals. He was associated with the Earl Clinic of Saint Paul from his graduation until the time of his death. He was a member of the staffs of Midway and Mounds Park Hospitals. He was also a member of Ramsey County Medical Society, Minnesota State Medical Association, American Medical Association, and American Academy of General Practice.

On January, 1932, he suffered a stroke which left him with a partial left hemoplegia. At that time he was away from his practice for about a year. In spite of his disability he was able to carry on an active practice until the time of his death, although in more recent years his practice was limited almost entirely to allergy.

Dr. Johnson was especially interested in youth work and for many years was director of the young men's and boys' activities at the Gustavus Adolphus Lutheran Church of Saint Paul. Many a young physician owes his medical education to the encouragement and financial assistance given by him.

Dr. Johnson never married. He is survived by a sister, Mrs. Edith Rohr of Saint Paul, and two nieces, Mrs. Chas. Treanor and Carolyn Rohr.

J. L. NOBLE, M.D.

Of General Interest

Dr. H. L. Berge, formerly of Isle, has become associated in practice with Dr. W. F. Nordman in Mora.

* * *

All controls on the prescribing and use of quinidine have been removed by Congress, effective June 1, 1948.

* * *

A trip to Honolulu, Hawaii, was taken during January by Dr. and Mrs. H. S. Trueman, who returned to their Minneapolis home about February 1.

* * *

Dr. Harry B. Clark, St. Cloud, was appointed Stearns County physician by the Stearns County commissioners at a meeting in St. Cloud on January 4.

* * *

On December 15, Dr. H. D. Nagel observed the twenty-fifth anniversary of the opening of his medical practice in Waconia.

* * *

Dr. Henry C. Otto, Frazee, was elected president of the Clay-Becker County Medical Society at a meeting held in Moorhead on December 3.

* * *

Escaping part of Minnesota's snow, Dr. and Mrs. F. C. Rodda, Minneapolis, left during the middle of January for a winter vacation in San Francisco. They expected to return home on March 1.

* * *

In Duluth on December 15, Dr. E. Irvine Parson presented a program dealing with "socialized medicine" at the noon meeting of the Duluth Exchange Club.

* * *

Dr. Harold G. Ravits has opened offices at 546 Lowry Medical Arts Building, St. Paul, for the practice of dermatology and dermatologic allergy.

* * *

Dr. J. Emery Frank, Marshall, announced on December 29 that he was planning to move to Salt Lake City, Utah, where he intended to open a clinic for the practice of medicine.

* * *

Chief speaker at the eleventh annual meeting of the Pine County Nursing Service, held in Askov on December 8, was Dr. Mario Fischer, Duluth, director of Public Health District No. 4.

* * *

The selection of Dr. Karl W. Anderson, medical director of Northwestern National Life Insurance Company, as chairman of the Minneapolis Community Chest's



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health and medical care division was approved by the Chest board at a meeting on December 27.

* * *

Dr. Walter G. Benjamin, Pipestone, has announced that Southwestern Minnesota's second annual Health Day will be held in Pipestone on February 22. Dr. Benjamin is chairman of the event.

* * *

Honor guests at a meeting of the ZCBJ Lodge in New Prague on December 4, Dr. E. E. Novak was presented with a pin to commemorate his fiftieth year of membership in the lodge.

* * *

Dr. and Mrs. C. L. Oppegaard returned to Crookston on December 13, after Dr. Oppegaard had attended a medical meeting in Minneapolis during the previous week end.

* * *

Guest speaker at the December meeting of the Bethesda Hospital nursing staff in Crookston was Dr. C. L. Oppegaard, who spoke on "Ethics" in regard to hospital personnel.

* * *

The distinguished service award of the American Society of Anesthesiologists was presented to Dr. J. S. Lundy, Rochester, at the meeting of the group in St. Louis in December. Dr. Lundy was given the award in "recognition of his outstanding contributions in the field of anesthesiology."

Dr. Richard A. Whitney, Cambridge, was named president-elect of the Eastern Minnesota Medical Society at a meeting in Cambridge on December 7. Dr. Whitney will take office in 1950.

* * *

Early in December it was announced that Dr. Aldridge F. Johnson, of the tuberculosis sanatorium in San Haven, North Dakota, would move to Sanborn during the middle of the month to open offices for the practice of medicine.

* * *

Dr. P. S. Hench, Rochester, returned in December from a three-month tour of Europe, where he presented lectures in England, Norway, Sweden, Denmark and Germany.

* * *

Dr. Dallas B. Phemister of Chicago was recently installed as president of the American College of Surgeons, replacing the outgoing president, Dr. Arthur W. Allen of Boston.

* * *

Members of reserve army medical units of the Twin Cities met on December 21 at Fort Snelling to hear talks on plastic surgery and head wounds. Speaking at the meeting were Dr. Conrad Karleen, Minneapolis, and Dr. Wallace P. Ritchie, Saint Paul.

* * *

Dr. Willard M. Akins, Red Wing, was elected president of the Goodhue County District of the Gustavus Adolphus College Association at its annual meeting on

December 29. Dr. Akins, who moved to Red Wing in 1946, was formerly associated with the More Hospital in Eveleth for about ten years.

* * *

At a meeting of the Mayo Foundation Fellows Association in Rochester on December 8, Dr. Howard Anderson was elected president of the group. Other officers named were Dr. John Beeler, vice president; Dr. Eric Routley, secretary, and Dr. LeMon Clark, treasurer.

* * *

Dr. P. C. Welton, former medical director of the Buena Vista Sanatorium, has returned to that position, it was announced in Wabasha on January 3. Dr. Welton, who was located in Wabasha in 1941 and 1942, practiced in Tucson, Arizona, after leaving the sanatorium post.

* * *

An article by Dr. Wesley W. Spink and Dr. Abraham I. Braude, of the University of Minnesota, on the use of aureomycin in the treatment of Brucellosis appeared in a December issue of the *Journal of the American Medical Association.* Experiments conducted in Mexico were discussed.

* * *

Dr. George W. Bagby, Cannon Falls, was married on December 20 to Miss Connie Hanson, formerly of Barnesville. Serving as best man for the ceremony, which was held in Barnesville, was Dr. Eugene V. Meyerding, Saint Paul. Dr. Bagby, a graduate of Temple University Medical School, has practiced medicine in Cannon Falls for the past year and a half.

On January 7, an office was opened in Middle River for Dr. Charles A. Haberle of Thief River Falls. Furnished by local residents, the office was provided in an effort to give Middle River better medical service. Dr. Haberle planned to spend one day per week there, unless the demand warranted more frequent visits.

* * *

The Committee on Rural Medical Service of the Illinois State Medical Association in collaboration with the Illinois Agricultural Association, has established a $100,000 fund from which to make loans to medical students to help them complete their training on condition they practice in rural areas.

* * *

Dr. Wilford F. Widen, Minneapolis, was guest speaker at a charity-collection meeting of the Baptist Men's Brotherhood in Willmar on December 10. Purpose of the meeting, which was accompanied by a turkey dinner, was to gather offerings to support world missions and charities of the church.

* * *

Dr. Charlotte M. Biddle, on December 17, announced the opening of offices in the Day Building, Wayzata, for the general practice of medicine. A graduate of the University of Minnesota Medical School, Dr. Biddle interned at St. Joseph's Hospital, Saint Paul, and then served a two-year residency at Minneapolis General Hospital. For a time she engaged in private practice in the Hawaiian Islands.



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At the annual meeting of the Southern Minnesota Branch of the American Academy of General Practice, held in Mankato in December, Dr. D. H. Dewey of Owatonna was elected president of the group. Other officers elected were Dr. Otto B. Fesenmaier, New Ulm, vice president, and Dr. Roger G. Hassett, Mankato, secretary-treasurer.

* * *

Dr. Gordon R. Kamman of Saint Paul addressed the Stearns-Benton Medical Society in St. Cloud on Thursday, January 27. His subject was "Neuropsychiatric Conditions Commonly Seen in General Office Practice." Dr. Kamman recently addressed the Missouri Society of Neurology and Psychiatry in Kansas City on "The Value of the Rorschach Test."

* * *

Dr. Donald R. Lannin has opened an office at 455 Lowry Medical Arts Building, Saint Paul, for the practice of orthopedic surgery. Dr. Lannin graduated from the University of Minnesota Medical School in 1940, served in the Navy from 1941 to 1945, and has been a resident in orthopedics at the University and Shriners' Hospitals for the past three years.

* * *

Officials of the Minnesota Division, American Cancer Society, announced on December 25 that $5000 had been granted the University of Minnesota to finance a hormonal study in cancer research. The grant, made for the Dr. William A. O'Brien fellowship, will aid the cancer biology work of Dr. Robert A. Huseby, who is conducting a study on the response of breast cancer to hormone therapy.

* * *

Dr. Robert Bailey, Fairmont, announced in December that he planned to close his practice in the city in mid-January to accept a surgical residency at St. Monica's Hospital in Phoenix, Arizona. Dr. Bailey, a son of the late Dr. H. B. Bailey of Fairmont, opened his practice in Fairmont in December, 1945, after three and one-half years of military service.

* * *

Citizens of Jeffers, anxious to have a physician locate in the community, announced on December 28 that L. A. Duroe, of Jeffers, had given the village an eight-room residence to be used as a home and office for a physician if one could be found. At the time the gift was announced, civic organizations had been trying for a long time, unsuccessfully to obtain a doctor for the community. Residents hoped that the new inducement might solve their medical problem.

* * *

After nine years with the Worthington Clinic, Dr. W. R. Schmidt announced in December that on January 1 he would leave Worthington to become a resident in chest surgery at the Minneapolis Veterans Hospital. During World War II, Dr. Schmidt served with the armed forces in the South Pacific area. His position at the Worthington Clinic is being filled by Dr. William

Pratt, who recently completed a four-year fellowship in surgery at the Mayo Clinic.

* * *

It was announced on December 29 by Dr. G. M. A. Fortier, Little Falls, that Dr. Scott J. Mighell, formerly of Minneapolis, would join the staff of the Little Falls Medical Clinic on January 4. A graduate of the University of Iowa Medical School, Dr. Mighell served his internship at Philadelphia General Hospital and then entered the U. S. Air Forces, being stationed in Japan and the Philippine Islands. He has taken postgraduate work at the University of Minnesota Hospitals.

* * *

Dr. M. S. Rayman, formerly of Chicago, joined the staff of the Two Harbors Community Health Center and Clinic early in December. A graduate of the Columbia University Medical School, Dr. Rayman interned at Michael Reese Hospital, Chicago, and then took postgraduate training at Pennsylvania State Hospital and at the Newark Beth Israel Hospital, New Jersey. Before moving to Two Harbors, he was practicing in Darwin, California.

* * *

Gonvick again procured the services of a physician on January 1, when Dr. Norman F. Stone, formerly of Minneapolis, arrived in the community to open offices for the practice of medicine. His arrival filled the local medical gap that had existed since the death of Dr. John Stevens in 1947. Dr. Stone, a graduate of the University of Minnesota Medical School in 1944, has served in the Navy, practiced briefly in Mankato, and taken postgraduate work at the University of Minnesota Hospitals.

* * *

Dr. F. C. Anderson, after two and one-half years of practice in Little Falls, announced on December 18 that he would be associated with Dr. A. J. Olson in the practice of medicine at Owatonna after January 1. The two physicians, both former residents of Cloquet and friends since childhood, took their college training together. During his stay in Little Falls, Dr. Anderson was associated with Dr. R. V. Fait and Dr. D. L. Johnson.

* * *

In November, Dr. Osmund A. Wisness moved from Minneapolis to Slayton to become associated with the Doms-Pierson Clinic there. A graduate of the University of Minnesota Medical School in 1945, Dr. Wisness interned at the University of Maryland and then served for two years in the army. Following his discharge in February, 1948, he took residency training at Fairview Hospital, Minneapolis, where he remained until moving to Slayton in November.

* * *

Early in January, Dr. Sidney F. Becker, after two years of association with the Bemidji Clinic, announced his affiliation with Dr. E. W. Johnson, Bemidji, in the general practice of medicine and surgery. A graduate of the University of Minnesota Medical School in 1942, Dr. Becker served in the Navy for three and one-half years and then engaged in general practice at Thief



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River Falls for a short time. Before moving to Bemidji in January, 1947, he took postgraduate training at the University of Minnesota for six months.

* * *

At the annual meeting of the Minnesota Association of Coroners in St. Cloud in December, Dr. E. A. Kilbride, Worthington, Nobles County coroner, was elected president of the group. He succeeds Dr. John W. Ekblad, Duluth, St. Louis County coroner, in the office.

Other officers elected at the meeting were Dr. R. H. Puumala, Cloquet, Carlton County coroner, first vice president, and Dr. J. N. Libert, St. Cloud, Stearns County coroner, second vice president. Dr. Russell Heim, Minneapolis, Hennepin County coroner, was re-elected as secretary-treasurer.

* * *

Plans to open a clinic in Minneapolis for pre-school children with cerebral palsy were announced on January 5 by the Minneapolis Junior League and the Minnesota Society for Crippled Children and Adults. Chairman of a medical committee connected with the development of the clinic is Dr. E. J. Huenekens, Minneapolis. At the clinic, which will open about May 1, children suffering from cerebral palsy will be "screened" in regard to capabilities for education by the University of Minnesota's Institute of Child Welfare. Children with the affliction must be referred to the clinic by physicians.

* * *

Four of the Minnesota physicians who attended a one-week course in child psychiatry at the University of Minnesota Center for Continuation Study, December 6 through 11, were Dr. John Stam, Worthington; Dr. Harold L. Stemsrud, Alexandria, and Dr. Russel E. Carlson and Dr. Henry Van Meier, both of Stillwater.

The course, which was given with the co-operation of the U. S. Public Health Service and the Minnesota Department of Health, was attended by fifty-two pediatricians and general practitioners from the United States and Canada.

* * *

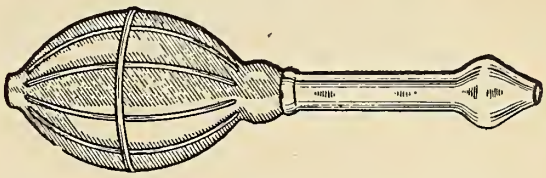
It was announced on January 4 that Dr. James C. Masson, chief of the Mayo Clinic's surgical staff since 1935, had retired at the age of sixty-seven. Dr. Masson had been chief surgeon since the death of Dr. Edward Starr Judd, who had succeeded Dr. William J. Mayo in the post.

A graduate of the University of Toronto, Canada, Dr. Masson went to Rochester in 1912 as an intern at St. Mary's Hospital. In 1913 he became a first assistant in surgery, and in 1915 he was appointed head of a section in surgery. From 1946 until his retirement he served as a senior consultant on the clinic staff.

* * *

Dr. Howard Lundy Sather has been appointed a Lieutenant (jg), Medical Corps Reserve, U. S. Naval Reserve, according to an announcement by the Minneapolis Office of Naval Officer Procurement. He is now serving his internship at Ancker Hospital, Saint Paul, Minnesota. The son of Mr. and Mrs. Clarence Sather of Minneapolis, Dr. Sather attended the University of Marquette where he received his M.D. degree in June, 1948. He is a member of the medical fraternity, Alpha Kappa Kappa. He was sworn into the Navy at the Office of Naval Officer Procurement in Minneapolis.

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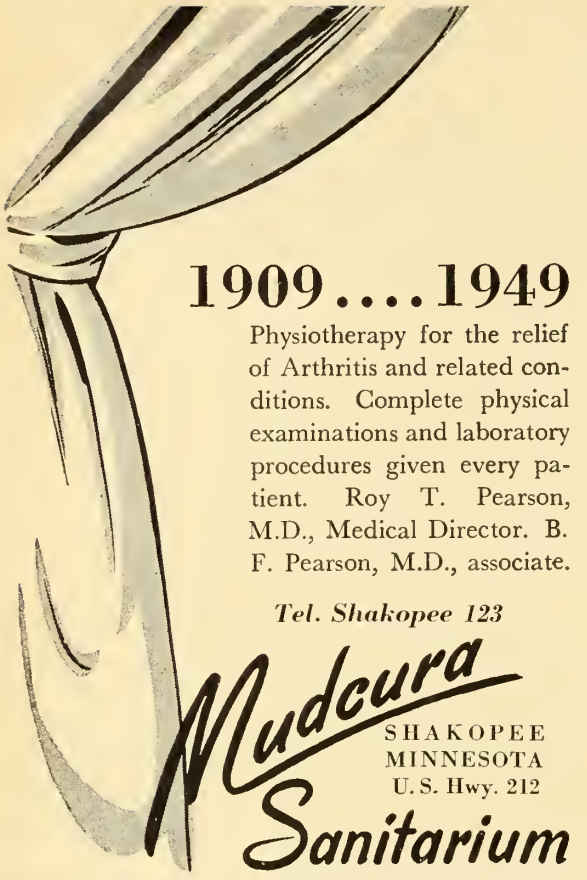
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* * *

The Nebraska State Legislature recently passed a resolution to the effect that whereas the American people enjoy the highest level of health, the best standards of scientific medical care and the finest medical institutions in the world, and whereas there has been a progressive deterioration of medical standards in countries where the government has assumed control of medical care, that the Nebraska State Legislature respectfully requests the Congress of the United States to refrain from imposing upon the citizens of this nation any form of compulsory health insurance or any system of medical care designed for national bureaucratic control.

* * *

Smith, Kline & French Laboratories of Philadelphia awarded in 1948 a total of seventy-three grants amounting to $314,761 in support of medical research, according to an announcement by Mr. W. Furness Thompson, Vice President in charge of research. Twenty-seven of these grants were made to twenty medical schools, and the balance to institutes, clinics and individual investigators. The funds were provided



under three main categories: as scholarships and fellowships; as aids to preclinical research in such fields as pharmacology, bacteriology, biochemistry, histology, microanalysis, mycology, organic chemistry, pharmaceutical chemistry and physical chemistry; and for support of investigations in various fields of clinical medicine as hypertension, pain, cardiovascular conditions, epilepsy, anemia, dermatology, obesity, et cetera.

* * *

Among Minnesota physicians who attended a three-day continuation course in cancer at the University of Minnesota, December 2 through 4, were Dr. F. W. Bachnik, Hibbing; Dr. R. G. Hankerson, Minnesota Lake; Dr. Nels N. Sonnesyn, Le Sueur; Dr. Francis M. McCarten, Stillwater; Dr. C. L. Roholt, Waverly; Dr. A. J. Lenarz, Browerville; Dr. Richard P. Griffin, Benson; Dr. Leroy J. Larson, Bagley; Dr. C. A. Boline, Battle Lake; Dr. Douglas L. Johnson, Little Falls; Dr. John A. McIntyre, Owatonna; Dr. Charles Vandersluis, Bemidji; Dr. H. A. Burns, Anoka; Dr. Carl Lundell, Granite Falls, and Dr. Walter S. Neff and Dr. Robert P. Pearsall, both of Virginia.

During the course, which was given for non-metropolitan physicians, the attending doctors had an opportunity to inspect the Cancer Detection Center at the University of Minnesota and to study the results of the hundred of examinations that have already been given there. Part of the course consisted of discussions of the techniques and newest developments in cancer diagnosis and treatment.

* * *

Red Cross Blood Centers.—The American Medical Association's Blood Bank Liaison Committee with the American Red Cross has been informed that nineteen blood bank programs, including the statewide service in Massachusetts, were in operation as of December 20, 1948. More than 97,000 pints of blood have been collected and made available without charge to physicians at 614 hospitals and forty-two clinics.

Since the opening of the first center in Rochester, New York, a year ago, centers have been established in Wichita, Kansas; Stockton, Los Angeles and San Jose, California; Atlanta; Washington, D. C.; Tucson; Omaha; Springfield and St. Louis, Missouri; Charlotte, North Carolina; Detroit and Lansing, Michigan; Yakima, Washington; Great Falls, Montana; Columbus, Ohio, and Saint Paul. Scheduled for early opening are regional centers at Portland, Philadelphia, Nashville, Boise and Louisville.

* * *

Dr. Carl Buturf, Freeborn physician, whose retirement to Minneapolis after thirty-seven years of rural practice was announced in the January issue of Minnesota Medicine, decided after one month of city life to "un-retire." Early in January, he and Mrs. Buturf moved from the Minneapolis home they had occupied since Thanksgiving, back to the community they had lived in for almost forty years. There, in Freeborn, Dr. Buturf reopened his office and his drug store, and began again the practice he had conducted for so many years. The community residents, to whom Dr. Buturf has been and still is their only physician, happily welcomed his return and promised to redecorate the medical office.

Now, Dr. Buturf, who says, "The city's all right, but —," plans to build a new home on the shores of Lake Freeborn, where Mrs. Buturf can grow wild flowers and where there is "plenty of space to move around in."

* * *

Forty years of medical service in Worthington were ended by Dr. B. O. Mork, Sr., when he retired on January 1 at the age of eighty-one.

Born in Norway, Dr. Mork came to the United States at the age of nineteen. After working for several years at the Indian agency in Granite Falls, he studied at Hamline University and was graduated in 1898. He then served for several years as a school teacher, before returning to Hamline to obtain his medical degree at the age of forty. In 1908 he moved to Worthington and formed a medical partnership with a Dr. Henry Wiedow. With four associates, Dr. Mork organized the Worthington Clinic in 1920.

Dr. Mork has two sons, both prominent Worthington residents. Dr. B. O. Mork, Jr., is director of Public Health District No. 5, and Raymond Mork is the Nobles County attorney.

* * *

Dr. D. A. Dukelow, director of the health and medical care division of the Hennepin County Community Chest

and Council since November, 1945, has been named medical consultant on health and fitness for the American Medical Association in Chicago. He will leave Minneapolis near the end of February to assume his new duties early in March.

A former practitioner in St. Charles, Dr. Dukelow was director of public health education for the Minnesota Department of Health from July, 1937, to November, 1945. He has been secretary of the public health education section of the American Public Health Association since October, 1947, and executive secretary of the Minnesota Public Health Conference since January, 1947.

In his new position with the AMA, Dr. Dukelow will be a consultant to school administrators and physicians associated with school health programs.

* * *

"Shall the Federal Government Provide Health Insurance?" That was the debate question at a Minneapolis Town Meeting held on January 10, with a Minneapolis physician, Dr. Max Seham, urging federal compulsory health insurance and declaring, "We can no longer be satisfied with half-way measures and patch-work proposals. By their very nature they [voluntary plans] cannot furnish the medical services that the majority of the people today need and want. They are too expensive." To provide adequate health protection for the groups who need it most, he said, "the only alternative is to enact such a program as proposed by Senator Murray and his associates in his last bill."

Taking the affirmative with Dr. Seham in the debate was Robert Gannon, state CIO legislative representative. Upholding the negative were Dr. M. M. Weaver, assistant dean of the University of Minnesota Medical School, and Carl A. Ernst, president of the Minnesota Association of Accident and Health Underwriters. Mr. Ernst asserted, "What seems to be overlooked by labor in this country is that when these social security programs cover the entire population, everyone will be up to his neck in the compulsion of taxes. Once completely under government control, labor will go the way of labor in other countries."

HOSPITAL NEWS

For the first time in the history of Asbury Hospital, Minneapolis, the medical staff is headed by a woman. Dr. Ann W. Arnold was elected president of the staff at its annual meeting in December. A graduate of the University of Pennsylvania Medical School, Dr. Arnold has practiced in Minneapolis since 1925.

Other staff officers elected at the meeting were Dr. Paul J. Preston, vice president, and Dr. Wayne S. Hagen, secretary-treasurer.

* * *

Dr. C. B. Nessa, St. Cloud, was elected chief of staff at the St. Cloud Hospital at a staff meeting on December 13. Other officers elected include Dr. N. F. Mussachio, Foley, vice president, and Dr. E. V. Wetzel, St. Cloud, secretary.

* * *

Speaking at a meeting of the Civic and Commerce Association in Redwood Falls on December 8, Dr. R. J.

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Cairns discussed the problems facing the city hospital because of the additional burden caused by the closing of the government hospital for Indians at Pipestone. He pointed out that hospitals throughout the county would have to assume the extra patient-load, and that facilities at the Redwood Falls Hospital were already being used to capacity. "We can only hope our present facilities can be expanded," he said. The hospital superintendent, Anna C. Rindal, said that the staff was eager to serve Indian patients needing medical care but that there simply was no room for more patients in the twenty-two-bed hospital.

* * *

Dr. Reuben A. Johnson was named president and chief of staff of Abbott Hospital, Minneapolis, at a meeting of the medical staff in December. Other officers elected include Dr. Ralph E. Creighten, vice president, and Dr. Elizabeth Lowry, secretary.

* * *

It was announced on December 9 that Dr. J. J. Smyth, Lester Prairie, and Dr. C. A. Anderson, Hector, had become members of the Glencoe Municipal Hospital staff.

* * *

As part of the program of Mental Health Week, Dr. E. W. Miller, superintendent of the Anoka State Hospital, addressed a group of state senators, representatives, heads of civic groups, clergymen and county and city officials at a meeting held at the hospital on December 2. Dr. Miller discussed the history of the Anoka hospital, false economies that had been attempted in the past, present problems in personnel, new techniques for handling patients, and hospital requirements for the future. He listed the reasons for the hospital's request for a larger legislative appropriation, and asked his listeners to do what they could to promote the success of the program.

* * *

The West Side General Hospital, Saint Paul, which was founded nearly forty years ago by the late Rev. John M. Bartmeier, has been reorganized through the efforts of the Riverview Commercial Club and will be operated by a new corporation as the Riverview Memorial Hospital. The directors are West Side citizens, with Herman C. Marthaler, president; Leroy Weir, vice president; Walter Perlt, secretary, and Julius H. Brogmus, treasurer. Mr. Conrad Swanson, manager of the Riverview Commercial Club, is the acting manager of the hospital. The present medical staff, of which Dr. Herman Kesting is chief, and the present superintendent, Miss Genevieve Courteau, will continue.

* * *

Charles M. McLean, a recent graduate of the Washington University School of Hospital Administration, has assumed the duties of assistant superintendent at Ancker Hospital, Saint Paul, under the direction of Dr. Thomas Brodie.

BLUE SHIELD NEWS

Applications covering Blue Shield participant subscribers received as of December 31, 1948	130,639
Blue Shield cases paid from December 1 to December 31, 1948	972
Total, 1948	4,431
Amount paid on Blue Shield cases from December 1 to December 31, 1948	$ 37,415.45
Total, 1948	166,229.63

At the close of 1948 the goal of securing 100,000 persons in Minnesota desiring the Blue Shield contract was achieved. In fact, this total was exceeded by 30,639. This is quite a distinction for Minnesota Medical Service Inc., for no other plan has ever reached such a figure in its first year of operation; of the total applications, representing 130,639 participant subscribers, contracts



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covering approximately 102,000 subscribers were in effect as of December 31, 1948.

Much credit is due the Enrollment Department of the Blue Cross-Blue Shield office for this wonderful record. Selling the Minnesota Blue Shield contract a year ago was not an easy task. The idea of a voluntary non-profit medical care plan was relatively new to Minnesota; therefore, a great deal of sales promotion was required. The subscription to this new contract meant an additional deduction from a pay check already subject to numerous deductions. The advantages of the Blue Shield contract had to be fully explained. Since the plan was so little known no "word-of-mouth" advertising was available, rather the bulk of the responsibility for selling the plan fell to the Blue Cross-Blue Shield representatives. It is gratifying to see that with much perserverance the enrollment in Minnesota Blue Shield has grown from 10,000 persons covered in February, 1948, to the current figure.

The co-operation of the doctors throughout the state in helping the representatives contact various organizations with a view toward introducing Blue Shield to farm bureaus and community groups has been of considerable assistance, for the doctors' support of Blue Shield is a definite factor in its favor. Now that the plan is well under way, the benefits derived have become obvious. The increasing number of letters of appreciation reaching the Blue Shield office daily bear out this statement.

The Blue Shield contract is at present sold only to groups of employed people and their dependents. Blue Shield expects to have available as soon as possible an individual contract for those who are not now eligible to receive a contract due to their employment status.

Blue Shield has shown a most favorable financial operating statement since its beginning. The co-operation of the doctors has shown no abuse of the plan. This is appreciated and undoubtedly will continue.

The Blue Shield Board of Directors is giving consideration to the return of the funds sent by doctors to finance the working capital of the plan. The plan for returning these funds must also meet the approval of government authorities as to when they may be returned without impairing the guarantee of the service to subscribers.

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Surgical Technique, Surgical Anatomy and Clinical Surgery, four weeks, starting February 7, March 7.
Surgical Anatomy and Clinical Surgery, two weeks, starting February 21, March 21, April 18.
Surgery of Colon and Rectum, one week, starting March 7, April 11.
Surgical Pathology, every two weeks.

GYNECOLOGY—Intensive Course, two weeks, starting February 21, March 21.
Vaginal Approach to Pelvic Surgery, one week, starting February 14, April 4.

OBSTETRICS—Intensive Course, two weeks, starting March 7, April 4.

MEDICINE—Intensive Course, two weeks, starting April 4.
Personal Course in Gastroscopy, two weeks, starting March 7.
Electrocardiography, four weeks, starting March 16.

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BOOK REVIEWS

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CONTROL OF PAIN IN CHILDBIRTH. Third Edition. Clifford B. Lull, M.D., F.A.C.S., F.I.C.S. Director, Division of Obstetrics and Gynecology, Philadelphia Lying-In Unit Pennsylvania Hospital, and Robert A. Hingson, M.D., F.I.C.S., F.A.C.A., F.I.C.A. Associate Prefessor of Obstetrics; anesthesiologist Department of Obstetrics, Johns Hopkins University and Hospital; surgeon, United States Public Health Service. 522 pages. Illus. Price, $12.00, cloth. Philadelphia: J. B. Lippincott Co., 1948.

TWENTIETH CENTURY SPEECH AND VOICE CORRECTION. Edited by Emil Froeschels, M.D. President, International Society for Logopedics and Phoniatrics; president New York Society for Speech and Voice Therapy. 321 pages. Price $6.00, cloth. New York: The Philosophical Society, 1948.

SYNOPSIS OF PEDIATRICS. John Zahorsky, A.B., M.D., F.A.C.P., Professor of Pediatrics and Director of the Department of Pediatrics, St. Louis University School of Medicine, and Pediatrician-in-Chief to the St. Mary's Group of Hospitals; Fellow of the American Academy of Pediatrics. Assisted by T. S. Zahorsky, B.S., M.D., Senior Instructor in Pediatrics, St. Louis University School of Medicine, and Assistant Pediatrician to the St. Mary's Group of Hospitals. 5th ed. 449 pages. Illus. Price $5.50. St. Louis: C. V. Mosby Co., 1948.

The fifth edition of this well-known synopsis maintains its excellent presentation of clinical pediatrics in capsule form. The material is well presented in a readable and highly condensed form.

There are a few omissions. For example, no mention is made of primary atypical pneumonia, nor are antihistaminics mentioned in the treatment of hay fever, urticaria, or serum disease.

However, the book has been brought up to date throughout and is an excellent and authoritative treatise on the essentials of pediatrics.

B. C. Adler, M.D.

PRACTICE OF ALLERGY. By Warren T. Vaughan; revised by J. Harvey Black. 2nd ed. 1092 pages. Illus. St. Louis: C. V. Mosby Company, 1948. Price $15.

Warren Vaughan's second edition of this classic text has been greatly delayed by his untimely death in 1944. Much of the present material is his own revision, but the whole contents had to be reviewed by the second author before the latter's editorship could begin. The subject matter retains the charm and flavor of Vaughan's original edition which makes it by far the most enjoyable reading of any of the treatises on allergy. The volume is printed on good quality stock and contains 1131 pages with many illustrations, most of them by the author himself, one of whose hobbies was photography.

Several outstanding features are presented. A thirty-page bibliography includes over 1,000 articles and represents essentially all of the important ones in the allergic field. The sections on food allergy and on pollens and pollinosis are exhaustive and the most authoritative obtainable. Photographs in the latter section actually allow the reader to recognize the various hay-fever-producing grasses and weeds. Descriptions of the various families of foods, their origin, their use in manufacture and processing and their importance in producing sensitization are excellently handled. As presented, they are interest to both the student of the subject and to the more casual reader.

Despite the reviewer's thorough enjoyment of this book, certain omissions must be commented upon. Many readers would have enjoyed the inclusion of a discussion of the relation between allergic symptoms and the autonomic nervous system. This is a relationship which is apparent to all clinical practitioners of medicine, regarding which there is as yet little published work. There is a discussion of the inaccuracy of skin tests, but this is not carried to the point where the reader understands that the tests are only clues and that one cannot make the diagnosis of the allergic state by the application of these tests. There is little discussion of sensitization to oils and fats, probably because of the dearth of literature on this subject and information regarding it.

This volume can be unhesitatingly recommended to all medical readers. The authors' manner of expression is much more lucid than is common in American medical writing. Those reading for enjoyment may find it here, those seeking specific information will surely find their needs satisfied.

Asher A. White, M.D.

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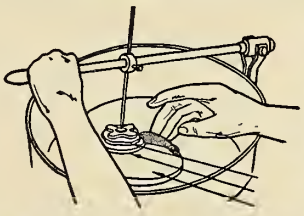
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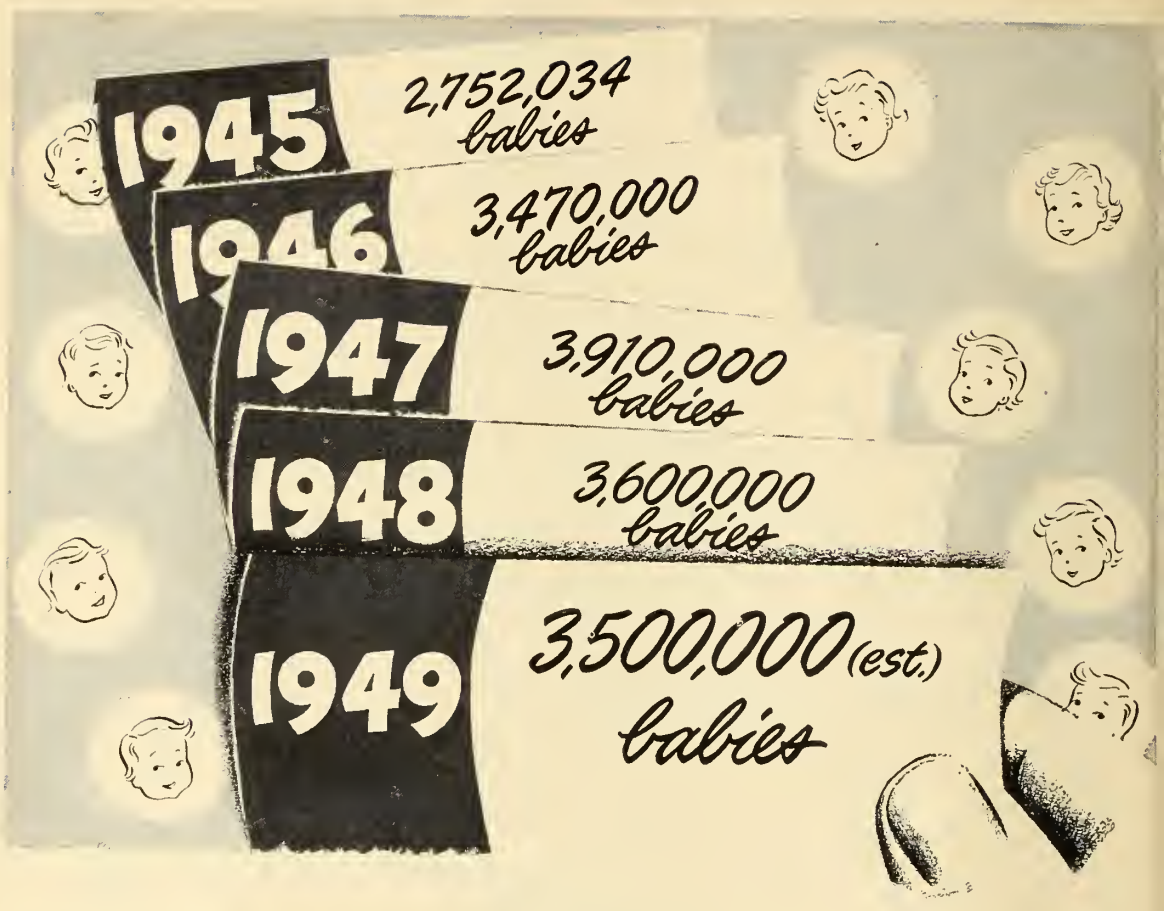


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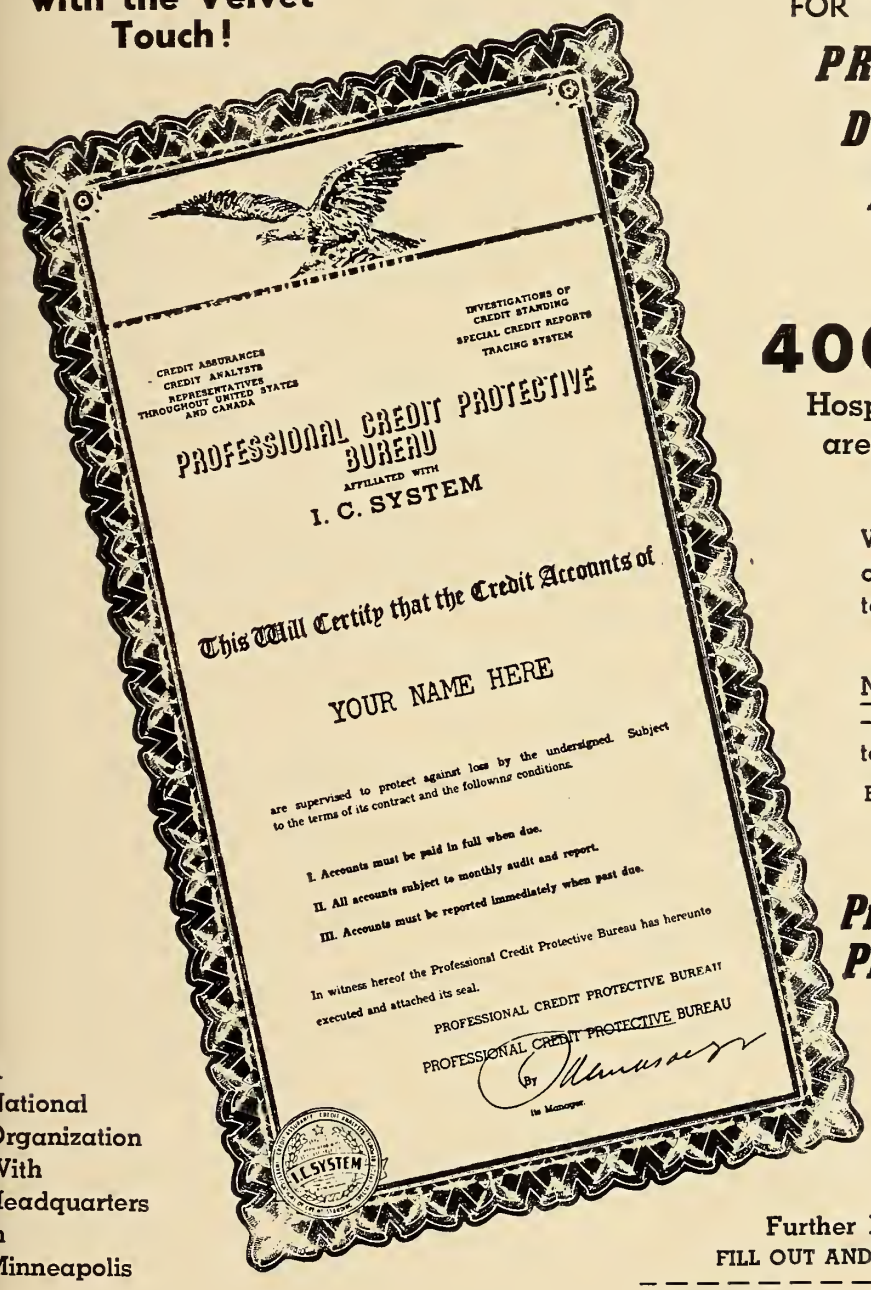
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[1] McLester, J. S.: Nutrition and Diet in Health and Disease, ed. 4, Philadelphia and London, W. B. Saunders Company, 1943.

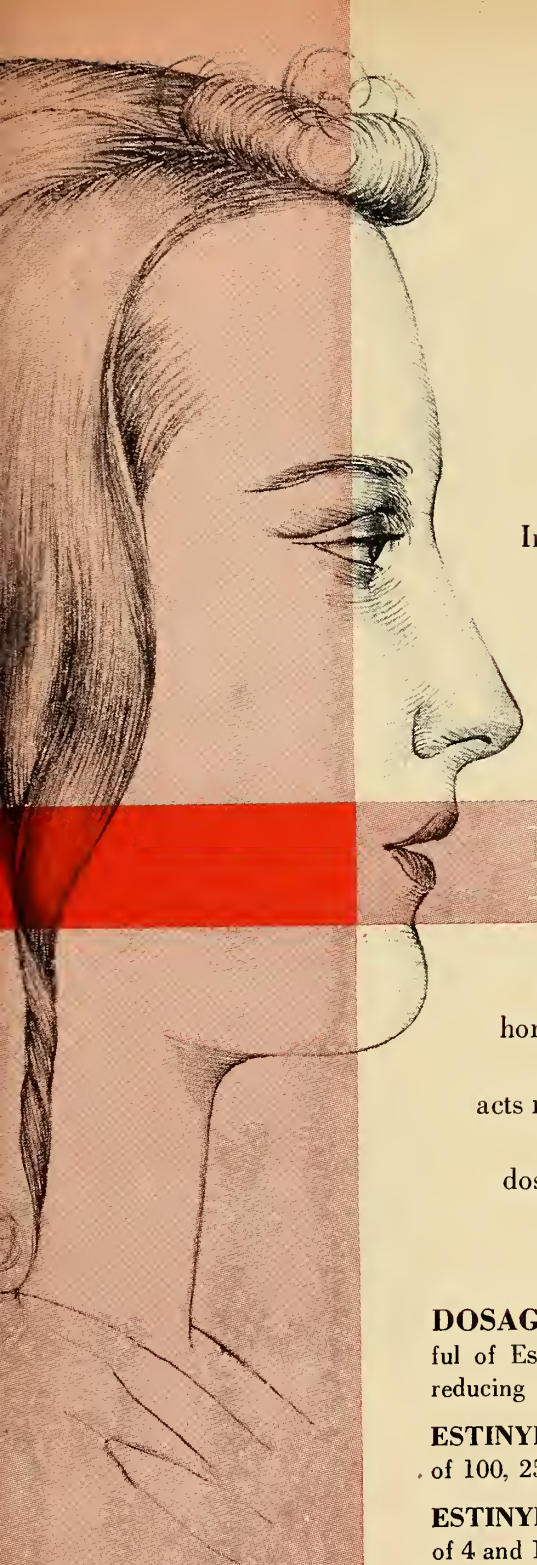
[2] Kunde, M. M.: The Role of Hormones in the Treatment of Obesity, Ann. Int. Med. 28:971 (May) 1948.

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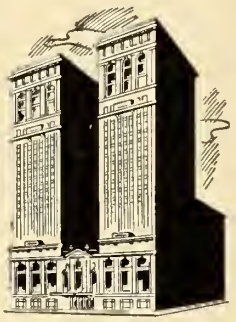
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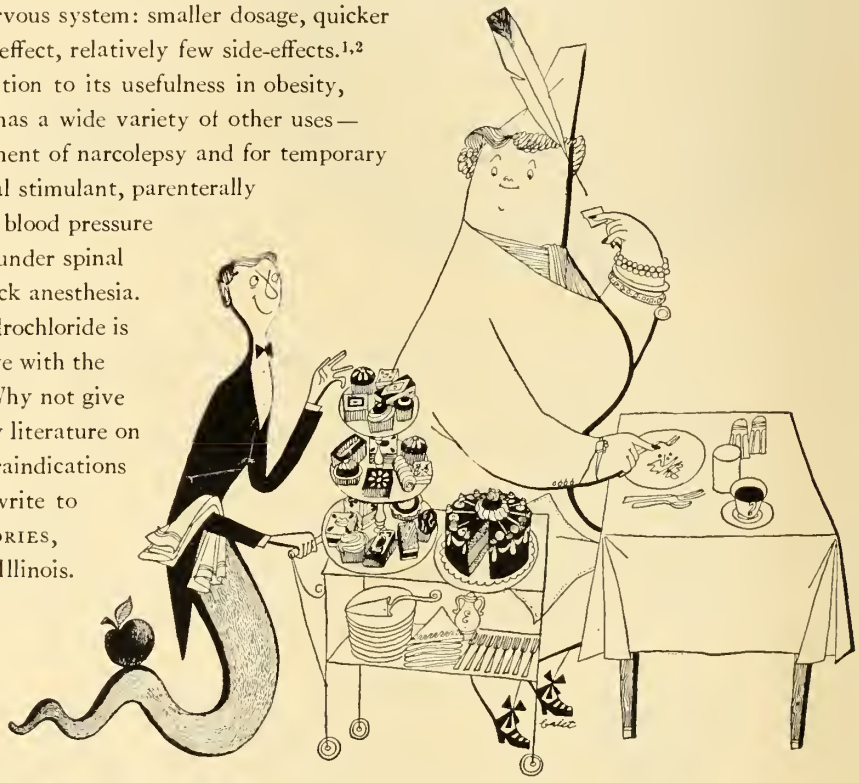
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1. Ivy, A. C., and Goetzl, F. R. (1943), d-Desoxyephedrine; A Review, War. Med., 3:60, January.
2. Davidoff, E. (1943), A Comparison of the Stimulating Effect of Amphetamine, Dextroamphetamine and Dextro-N-Methyl Amphetamine (Dextro-Desoxyephedrine), Med. Rec., 156:422, July.

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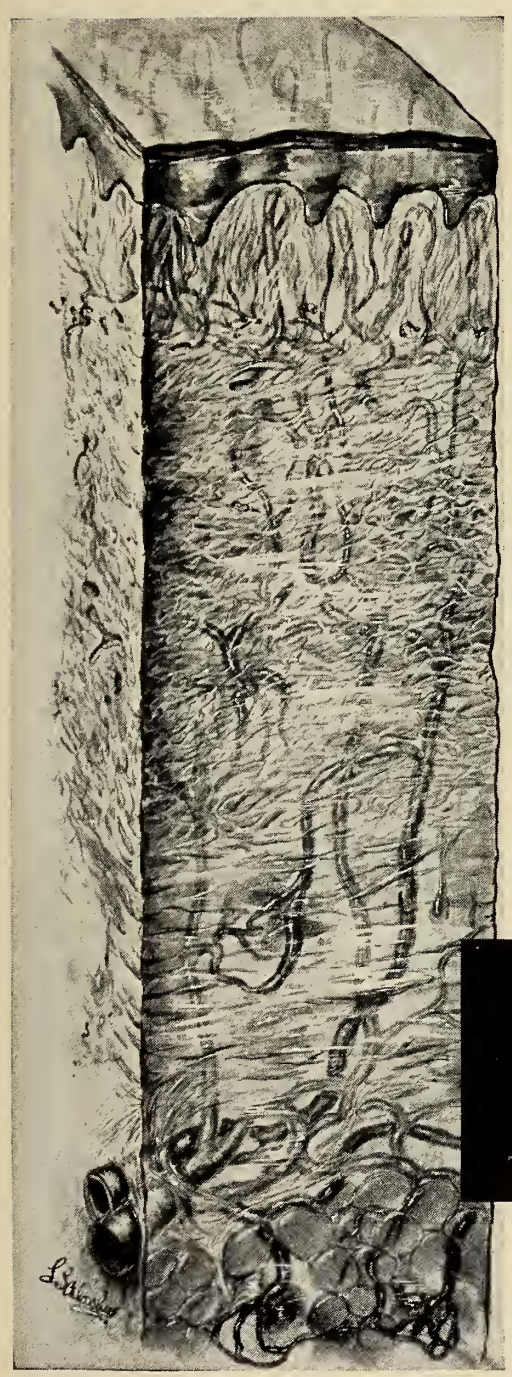
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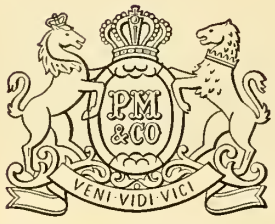
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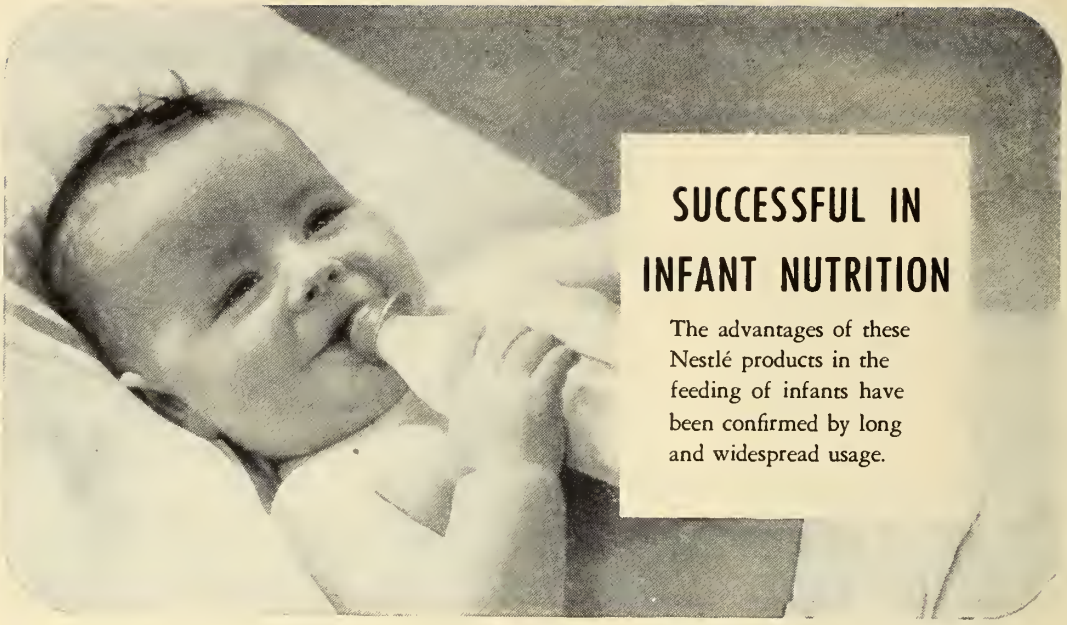
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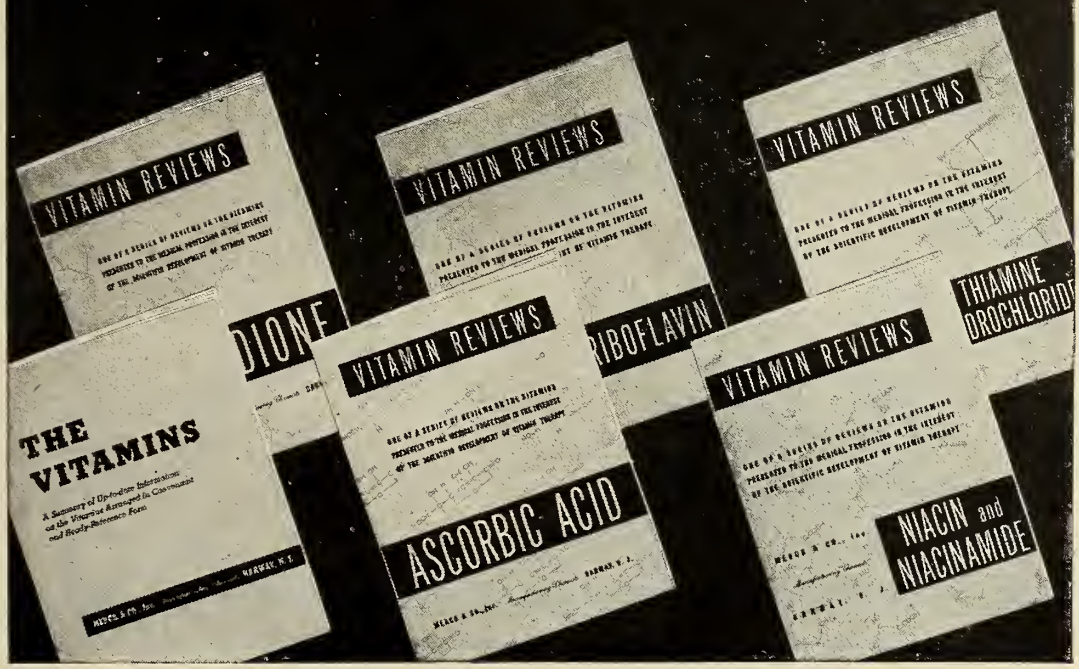
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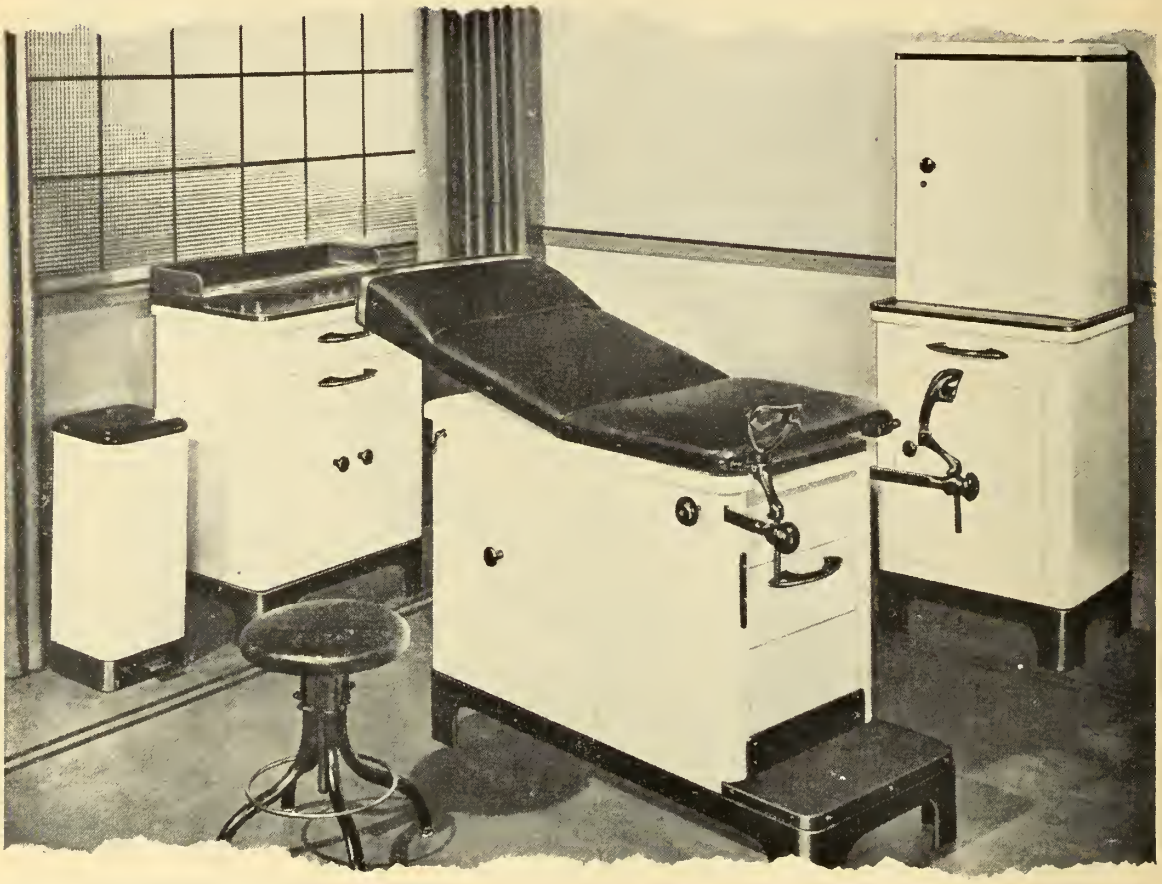
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DIAGNOSIS AND TREATMENT OF NEUROSYPHILIS

HENRY W. WOLTMAN, M.D., and ROBERT R. KIERLAND, M.D.
Rochester, Minnesota

IN presenting the subject of syphilis of the nervous system, one may begin with the initial infection, trace its progression into the nervous system and describe the havoc it works there; or one may follow the course by which our knowledge of it was attained. The former is easier to do; the latter, we believe, is more instructive to the practitioner, and so we shall attempt this somewhat unorthodox approach.

We may start early, but not quite at the beginning, by noting that the versatile Girolamo Fracastoro, of Padua, was not only an astronomer like his colleague, Nicholaus Koppernigk, but also a poet and above all an eminent epidemiologist. Padua had been hit hard by a great pandemic, which this writer of hexameters traced to a shepherd called "Syphilus." "Lues" is a much older latin word that meant simply "plague," and only later was the term restricted to this particular plague.

It was the cutaneous manifestations of the disease that engrossed the early writers. They did speak of headache, but centuries passed before there appeared any enlightenment on the neurologic sequelae that assume so prominent a position in syphilitic symptomatology, and their history has been pieced together with uncertainty and in retrospect.

Dementia Paralytica

In his "Observations on Madness and Melancholia," in 1798, John Haslam offered a clinical portrayal of dementia paralytica, and in 1826, Calmeil coined the term "general paralysis of the insane." In a sense this term was poorly chosen. These patients do become demented but not paralyzed, although they often complain of weakness, take to bed early and simply stay there. In 1853, long before the discovery of the spirochete and positive reactions in blood and spinal fluid, Esquirol, the immediate successor of Pinel, suspected its syphilitic origin. In 1906, Wassermann's discovery implemented the statistical approach and in 1913, Noguchi and others were able to demonstrate the Treponema pallidum in the brain.

Dementia paralytica overtakes about 5 per cent of neurosyphilitics and usually becomes evident in patients between the ages of thirty and fifty years, some five to fifteen years after the initial infection. It appears earlier in men than in women and affects them at least twice as often. The onset is insidious and is characterized by slight defect in memory, conduct and personal appearance and by increasing irritability and fits of temper. There is a blunting for regard of social and moral conventions; the first overt impropriety may be the pouring of champagne into a lady's pocket or urinating on the street. The mood may become gay and generosity extravagant, or the patient may become depressed and hypochondriacal, or he may sink gradually into an apathetic dementia. He may become paranoid, delirious or merely somnolent. While these personality changes are in progress, there may be interspersed convulsions and strokes of various kinds. The final scene is one of intellectual dilapidation, im-

From the section on neurology and psychiatry (Woltman) and the section on dermatology and syphilology (Kierland), Mayo Clinic, Rochester, Minnesota.

mobility and filth. The course of the illness may be acute or chronic, but if untreated, it generally lasts about three years.

From a neurologic standpoint, the sagging, tremulous features and the slovenly articulation at once attract attention. The pupils may be irregular, small or unequal, and often show the Argyll Robertson phenomena. The tendon reflexes are usually increased. There may be palsies of the cranial nerves and signs of focal damage to the brain.

The blood and spinal fluid findings are more persistently positive than in any other type of neurosyphilis. The serologic tests of blood and spinal fluid for syphilis usually give positive results. In the spinal fluid small and large lymphocytes and occasional neutrophils are present, protein is increased and Lange's colloidal gold curve is usually zone one. The diagnosis of dementia paralytica should be based on clinical signs, but the blood and spinal fluid picture just described, even without conclusive clinical evidence, justifies anticipation of eventual general paresis and is often referred to as paresis sine paresi. Its clinical counterpart, but without syphilis, is referred to as pseudoparesis and may be caused by alcoholism, arteriosclerosis, lead poisoning and other toxic states.

Tabes Dorsalis

Wasting of the back, or tabes dorsalis, according to Gowers, was a designation already applied by Hippocrates to all chronic paraplegias. It was Romberg who restricted the term to a wasting of the posterior columns of the spinal cord. Priority for a description, in 1851, of tabes that leaves little to be desired and that relates the clinical picture to shrinking of the posterior roots and columns of the spinal cord is usually assigned to him. An equally familiar name of the syndrome we are discussing is "locomotor ataxia." To escape the usage of Greek words, "offensive alike to the tongue and to the ear," as Duschenne said in 1872, "I was obliged to call the disease after one of its chief symptoms, viz., the progressive loss of the co-ordination of movement. The name 'progressive locomotor ataxy' seems to me to give the most exact idea of this kind of motor trouble." Of syphilis, he said, "I could not feel certain as to the relationship of syphilis and locomotor ataxy." He was more inclined to think of "moral causes," by which he meant mental suffering, or to use the phrase so current nowadays, "psychosomatic." Fournier, in 1876, was the first to assert the wide extent of the relation of syphilis to tabes. As late as 1888, Gowers wrote "Among the individual causes, one overshadows all the rest—the influence of syphilis. The lesion is not syphilitic in histologic character. It is moreover rarely influenced by antisyphilitic treatment. It must be regarded as a degenerative sequel of syphilis rather than a true syphilitic disease." For much the same reason and because gummas were never found, the great Virchow, who had asserted that tabes was caused by syphilis, reversed his opinion.

The assembling of the hierarchy of tabetic symptoms and signs, relating them to disease of the posterior columns of the spinal cord and proving this condition to be due to syphilis can be said to have required the combined efforts of many workers. Here, as in paresis, the introduction of the Wassermann reaction and discovery of the Spirochaeta pallida in the spinal cord cleared away remaining doubt.

Tabes develops in less than 10 per cent of neurosyphilitics; it affects men more often than women, and symptoms and signs usually delay their appearance until five to fifteen years after the initial infection. One of the earliest symptoms is "lightning pains." Although not quite pathognomonic of tabes, it is so suggestive that its behavior merits more detailed consideration. Lightning pains may appear anywhere in the body, but they are much more common in the lower extremities and are more distinctive when they occur at some distance from a joint. They tend to come in showers, often in a dollar-sized spot, which in turn becomes sensitive to the lightest touch but not to heavy pressure. They may make the patient feel as though the area had been touched by a lighted cigaret, but they do not exceed seconds in duration. They may seem to be linear streaks of pain that explode terminally like a rocket. One physician who had tabes compared them to the flight of lightning bugs. Lightning pains may occur in diabetic neuritis, in multiple sclerosis, in syringomyelia, in migraine and sometimes without demonstrable cause.

Also common in tabes is the girdle pain which causes the patient to feel as though a belt had been drawn too tightly round the waist or thorax.

For still another type of pain, let us turn to one of Charcot's lectures: "But of all the visceral symptoms which may display themselves, from

the period of lightning pains, which is at once the most remarkable and the least known, if I mistake not, is that which I have proposed to designate by the name of gastric crisis. . . . But the connection which really exists between gastric crises and locomotor ataxy appears to me to have been pointed out for the first time, by M. Delamarre, author of a thesis bearing the date 1866 and entitled 'Gastric Troubles in Locomotor Ataxia.' "

Especially suggestive of gastric crises is a midline epigastric or abdominal pain that may be mild or gruesome in intensity, that begins abruptly, may continue for hours, days or weeks, and, if there is no additional complication such as gastric or duodenal ulcer, ends abruptly. A period of convalescence is missing, and the patient is found sitting up prepared to eat a banquet meal. During the crisis, the patient does not tolerate the lightest touch of a sheet on the abdomen but raises no objection to a fist sunk deeply into it. A gastric crisis may be attended or entirely replaced by nausea. The patient then presents a most pathetic sight as he lies over the edge of the bed with a stream of saliva running out of his mouth from morning until night.

For years either lightning pains or crises may constitute the whole symptomatology of the disease. Typical crises may also occur with migraine, or as a familial disorder, or they may remain unexplained. Other kinds of crises, too, such as laryngeal, testicular and rectal, may occur with neurosyphilis.

Blindness, caused by simple optic atrophy, may appear early or late, and ophthalmoplegias of the external ocular muscles are not infrequent.

A common symptom, indeed the one by which Duchenne called the disease, is locomotor ataxia. Moritz Heinrich Romberg, professor of medicine, University of Berlin, described it well:

"The rider no longer feels the resistance of the stirrup, and has the strap put up a hole or two. The gait begins to be insecure, and the patient attempts to improve it by making a greater effort of the will; as he does not feel the tread to be firm, he puts down his heels with greater force. From the commencement of the disease the individual keeps his eyes on his feet to prevent his movements from becoming still more unsteady. If he is ordered to close his eyes while in the erect posture, he at once commences to totter and swing from side to side; the insecurity of his gait also exhibits itself more in the dark. It is now ten years since I pointed out this pathognomonic sign . . . and it is a symptom which I have not observed in other paralyses, nor in uncomplicated amaurosis. . . ."

The explanation of this symptom caused great difficulty, since the posterior columns could be destroyed and yet the patient acknowledged no deficit in the appreciation of scratching, pricking or pinching the skin, since the relationship of the posterior roots to the posterior columns was not known and since the posterior columns of the cord seemed to be related to the cerebellum. It was generally thought that degeneration of the posterior columns intercepted cerebellar control.

Now let us hear what Charcot had to say, in 1868, about another phenomenon most often found in tabes:

"Allow me to fix your attention for an instant upon this species of articular affection, in which I take a paternal interest, all the more lively because the significance I attach to it has had to counter many skeptics. And at first, a word as to the clinical characters of the arthropathies of ataxic patients. . . . Without any appreciable external cause, we may see, between one day and the next, the development of a general and often enormous tumefaction of the member, most commonly without any pain whatever, or any febrile reaction. . . . On puncture being made, a transparent lemon-colored liquid has been frequently drawn from the joint. . . .

"One or two weeks after the invasion, sometimes much sooner, the existence of more or less marked cracking sounds may be noted, betraying the alteration of the articular surfaces. . . .

"Ataxic arthropathy usually occupies the knees, shoulders, and elbows; it may also take up its seat in the hip joints—it is in the grey matter of the anterior cornua of the cord that the starting point of this curious complication of the ataxia is to be found according to our belief."

Sensory impairment and trauma are conditions attending the development of Charcot's joints, but there is doubt that these insults alone suffice to explain the arthropathies. The same phenomenon may be expected to occur and does occur in syringomyelia.

Trophic ulcers, usually situated on the ball of the foot and so often associated with other diseases in which sensation may be impaired, such as diabetic neuritis and myelodysplasia, are of frequent occurrence in tabes.

It must be noted that tabes is by no means an unadulterated parenchymatous myelopathy. Meninges and vessels may be affected in characteristic syphilitic fashion and thus superimpose an endless variety of symptoms.

There are certain objective findings of tabes

that pre-empt our attention. First is the Argyll Robertson pupil which, properly considered, has five characteristics: the presence of vision, a small pupil, a pupil that contracts poorly or not at all to light, one that reacts to accommodation, and one that responds imperfectly to belladonna. In 1869, Robertson, whose full name is Douglas Moray Cooper Lamb Argyll Robertson and should not be hyphenated, published a paper bearing the title "On an Interesting Series of Eye Symptoms in a Case of Spinal Disease with Remarks on the Action of Belladonna on the Iris, and so forth" and somewhat later a paper entitled "Four Cases of Spinal Myosis with Remarks on the Action of Light on the Pupils." Romberg had previously mentioned a contraction, even to the size of a pinhead, with loss of motion in one or both eyes. Merritt and Moore pointed out that there is only one situation in which a lesion can destroy both the light reflex and the sympathetic pathway and this is just ventral to the posterior commissure. The incomplete Argyll Robertson pupil has been seen unrelated to syphilis in epidemic encephalitis, alcoholism, tumor, syringomyelia and rarely as an heredofamilial characteristic. A small pupil that contracts to a point on conversion may also be observed with postural hypotension but not necessarily because of it. A larger pupil that reacts so very slowly to light and to conversion that this may escape notice and so be mistaken for the Argyll Robertson sign is the tonic pupil. Unfamiliarity with it may cause even greater confusion when it is coupled with loss of one or more tendon reflexes. This is a harmless situation known as Adie's syndrome.

Next, perhaps, should be mentioned loss of the tendon reflexes. Karl Westphal, in 1875, was the first to point out that a lost knee jerk is one of the earliest and most constant signs of tabes. Such loss is readily explained by encroachment of the pathologic process on the posterior roots, thereby interrupting the reflex arc.

Disease of the posterior roots probably accounts also for the involved pattern of sensory disturbance, one of the cardinal findings by which we may recognize tabes dorsalis as such. Appreciation of touch, pain and temperature may be impaired, lost or perverted, individually or in various combinations. The distribution of these changes is segmental, and the parts affected most commonly are the lower extremities, then the thorax and median aspects of the upper extremities, and finally the face. A pin applied to a toe or the dorsum of the foot may bring forth prompt acknowledgment of contact, but only seconds later an appreciation of pain, not a bright pain but a lingering and sometimes repetitive burning sensation that may be referred to some entirely different location, such as the opposite extremity. So kaleidoscopic a series of sensations may be provoked by a few pin pricks that the examination may have to be interrupted until they subside. Similar hyperpathic and perverted sensations also occur in syringomyelia, multiple sclerosis and neuritis. It is important that the thoracic zone be examined with care since sensory changes here are particularly helpful in diagnosis but are often overlooked. The sensory loss may be profound. Oppenheim spoke of a woman who had unknowingly pinned a corsage directly to her breast and had worn it throughout an evening's entertainment.

A patient having tabes is often exquisitely sensitive to changes in temperature, so that the application of a cold test object to the abdomen or of a tincture to the back before making a spinal puncture may all but send him flying to the floor.

Appreciation of movements of the joints, especially of the toes, may be difficult. In tabes this loss is often greater than is loss of appreciation of vibration and in this respect differs from the usual finding in subacute combined degeneration of the spinal cord.

Sensitivity of deeply lying structures is often impaired more profoundly than is sensitivity of the overlying skin. This disassociation is one of the most characteristic features of tabes and almost at once distinguishes it from polyneuritis, in which superficial sensation may also be impaired. Since muscles, larger nerves, eyeballs, epigastrium and testicles may be viciously squeezed without eliciting discomfort, care should be exercised in carrying out tests related to these structures. A gastric ulcer may perforate or an appendix may rupture without giving the attending physician any warning that a catastrophe is under way.

The sphincters are often relaxed and the finding of a cord bladder is common and diagnostically helpful.

The signs we have described usually serve to distinguish tabes from other neurologic disorders, such as cerebellar disease and polyneuritis. Combined sclerosis of the spinal cord may be simulated, and it is not surprising that, in 1884, Lichtenstern

wrote on tabes complicated by progressive pernicious anemia. Two years later, Lichtheim reversed the sequence and reported pernicious anemia complicated by subacute combined sclerosis. Occasionally a trap is set. When these patients were treated with arsenicals, they sometimes became even more disabled, and in consequence antisyphilitic treatment was intensified. Thus a superimposed arsenical polyneuritis reached really serious proportions. The greatest difficulty in diagnosis, however, arises in cases that really justify use of the term "pseudotabes diabetica." The resemblance to tabes may be very close; however, the diabetes, the absence of serologic evidence of syphilis and the finding of normally tender muscles, incongruous to the picture of true tabes dorsalis, lead to the decision that the condition is diabetic neuropathy. It must be admitted that there may be cases of true tabes with glycosuria and negative evidence on serologic examination.

Dementia paralytica and tabes are sometimes concurrent, the condition then being described as taboparesis.

Tabes and paresis, usually in conjunction, may follow congenitally acquired syphilis but differ relatively little from their expression in adults. The juvenile variant usually begins between the ages of nine and sixteen years. As would be expected, the juvenile taboparetic usually presents a simpler deteriorating deficiency, and the stigmas of congenital syphilis, such as keratitis and Hutchinson's teeth, create a classic picture.

Examination of the spinal fluid in tabes usually shows some increase in the lymphocytes; the serologic reactions for syphilis in blood and cerebrospinal fluid are usually positive and the gold sol reaction abnormal, usually with precipitation in the second zone.

Vascular Neurosyphilis

Large and small blood vessels, and particularly the arteries of the brain, may undergo perivascular cuffing, intimal changes and closures with results dependent on the part of the brain damaged by the affected vessel. The onset is usually stroke-like and there may be hemiplegia, aphasia, hemianopsia, bulbar symptoms, stupor and convulsions. The spinal cord, too, may become infarcted, with resulting paraplegia and incontinence, Brown-Séquard syndrome, syndrome of the anterior spinal artery, spastic paraplegia and an asymmetric variety of poliomyelitis. Closure of the veins likewise may occur and lead to myelomalacia. Associated with these vascular insults there is usually meningeal involvement as well.

There is no neurologic ensemble caused by disease of blood vessels that is pathognomonic of syphilis. A syphilitic etiology must be established from the content of the history and from other clinical and serologic evidence of syphilis.

Meningeal Neurosyphilis

Once the spirochete has entered the body, it spreads with great rapidity. It may be found in the lymph nodes before the chancre is visible, and presently it appears in the blood stream as well. In about one-third of the cases, its entrance into the central nervous system is reflected first by an increase in the number of cells in the spinal fluid, then by positivity of the serologic reaction in syphilis, increase in protein and alteration of colloidal solutions. The cells encountered in the spinal fluid may include small lymphocytes, large lymphocytes, plasma cells and neutrophils. When invasion of the nervous system occurs, it usually has taken place by the end of the third year. As time goes on, invasion becomes less and less likely, and the possibility of development of neurosyphilis diminishes correspondingly. In general, it may be said that if the reaction of the spinal fluid does not become positive during the first three years of the disease, it will continue negative, which in turn indicates that neurosyphilis neither is present nor will occur. It also has been learned that the more severe the reaction and the longer its duration, the worse is the prognosis. Thus far these changes in the spinal fluid need not be accompanied by symptoms, a situation classified as asymptomatic neurosyphilis. In about one-third of these cases, however, symptoms do develop, and then we speak of symptomatic neurosyphilis.

Involvement of the nervous system is marked by edema, cellular infiltration, particularly lymphocytic, increase in connective tissue and the formation of granulomas, or gummas. These changes follow the various fissures of the central nervous system, invade the brain, cord and nerves and cause symptoms and signs in profusion that come and go. None of the nerves arising from the brain or cord is immune to involvement. Fever is rare but it may occur, and the signs are sometimes those of an acute meningitis. More often the course is chronic. Headache is very common.

There may be choking of the disks but even so, a spinal puncture must be ventured to decide the issue. Involvement of the ependyma may close the aqueduct and lead to hydrocephalus. The dura mater may become enormously thickened, may then constrict both nerves and cord, most commonly, but not always, in the cervical region. Such a hypertrophic pachymeningitis then results in pain, sensory-motor paralysis of the upper extremities and a spastic paraplegia of the lower extremities. Spinal puncture usually reveals obstruction of the subarachnoid pathways. Gummas, though now rarely large, may form at any place and produce the picture of a tumor of the cord or of the brain. It is needless to say that a disease possessed of such vagaries in space and time may simulate almost any organic disease of the nervous system. Perhaps the most serious mistake that can be made, and made very easily, is to overlook the fact that a psychoneurosis, too, may be simulated. Also, it must not be forgotten that the serologic tests may give negative results and that the disease may progress in spite of treatment.

We must not leave the impression that the grand headings, "dementia paralytica," "tabes dorsalis" and "meningovascular neurosyphilis" are crystalline entities. In each the picture may be incomplete or atypical, and parts of all may be interwoven.

In 1851, Romberg exclaimed regarding the treatment of tabes, "There is no prospect of recovery of patients of this class; the fatal issue is unavoidable; the only consolation that can be offered to those fond of existence is the long continuance of the disease. It is but common humanity to inform him at once that therapeutic interference can only injure, and that nothing but the regulation of his diet can retard the calamitous issue." This was a grave pronouncement and, in a large measure, it would still apply, were it not for the effective treatment now available and the fact that early diagnosis is the rule.

Treatment

The treatment of neurosyphilis depends on three factors: (1) type of neurosyphilis encountered, (2) degree of activity of the cerebrospinal fluid and (3) general condition of the patient. All three factors must be evaluated together before a decision is made as to the treatment which will be most beneficial to the patient. As a rule, the general condition of the patient determines whether he should be inoculated with malaria or whether hyperpyrexia should be induced otherwise, and whether or not penicillin should be administered alone or in conjunction with the fever therapy. For instance, a patient with severe diabetes, hypertensive heart disease or cirrhosis of the liver should not be given fever therapy no matter how active may be the cerebrospinal fluid or how severe the clinical manifestations of his neurosyphilis.

Classification of Neurosyphilis.—Neurosyphilis may be of the following classes:

Asymptomatic
Meningeal
Meningovascular
Vascular
Tabes dorsalis with or without optic atrophy
Dementia paralytica with tabes dorsalis (taboparesis)
Dementia paralytica (paresis)

Special types:

Gumma of spinal cord or brain
Amyotrophic lateral sclerosis
Erb's spinal spastic paralysis
Epilepsy
Transverse myelitic syndromes (usually due to vascular occlusion or gumma)
Nerve deafness
Optic atrophy without tabes dorsalis, primary or secondary to neuroretinitis

In practically all instances a diagnosis of neurosyphilis must be confirmed by an examination of the cerebrospinal fluid, and in all patients with a persistently positive serologic reaction for syphilis or a history of syphilis, the cerebrospinal fluid should be examined for neurosyphilis.

Characteristics of active spinal fluids are summarized in Table I.

An arrested or inactive type of cerebrospinal fluid is characterized by a normal cell count and a normal protein value, but there may be degrees of positivity of the complement-fixation reaction and the colloidal gold test may show persistent reactions of the first or middle zone.

Penicillin.—Whether penicillin is to be administered alone or in conjunction with fever therapy, the total dose in one course of treatment should not be less than 6,000,000 Oxford units. In order to avoid a serious Herxheimer reaction, as may be expected in cases of general paresis, optic atrophy or gumma of the spinal cord or brain, the first twenty-four injections of penicillin should

be of 5,000 Oxford units each administered every three hours, followed by injections of 50,000 to 60,000 units every three hours until the total amount desired has been given. Penicillin is used preferably in the form of procaine penicillin, 300,000 units being given once or twice daily until the total dose of 6,000,000 units has been administered in instances in which Herxheimer effects are not anticipated. Other types of penicillin are used as well. Aqueous solutions of penicillin were given formerly in doses of 50,000 units every three hours for 120 injections or in doses of 60,000 units every three hours for 100 injections. Calcium penicillin in peanut oil and beeswax is also used but is being replaced by procaine penicillin. Other types of penicillin are on the way; however, there is not sufficient information to know their efficacy as yet. If penicillin is to be administered in conjunction with fever therapy, its administration should be started at the time fever begins unless a Herxheimer reaction is expected, when administration of penicillin should be started six to seven days in advance of the febrile period. Penicillin alone will reverse to normal or near normal spinal fluids of which the cell count is high. In the presence of clinical signs and symptoms, when a trial with penicillin fails to produce clinical improvement, fever therapy should be considered.

TABLE I. CHARACTERISTICS OF THE CEREBROSPINAL FLUID WHEN SYPHILIS IS ACTIVE

Group	Leukocytes per cubic millimeter	Total Protein, mg. per 100 c.c.	Complement Fixation	Colloidal Gold
I	6 or more	Normal or elevated	Negative	0000000000 to 3221000000
II	6 to 150 or more lymphocytes	Elevated to 120	Positive with 0.5 to 1.0 c.c. of fluid but not with smaller amounts	Any type, 0012321000 to 3221000000
III	50 to 200 lymphocytes, 0 to 25 polymorphonuclear cells	Elevated to 200	Positive with weak dilutions	5554310000

Fever Therapy.—Fever can be induced mechanically (Kettering hypertherm), by inoculation with malaria (Plasmodium vivax, Plasmodium malariae) or by intravenous injection of typhoid vaccine. In cases of neurosyphilis, either mechanically induced fever or malariotherapy is suggested, but treatments should be given by those especially trained in the use of these agents.

The best results are obtained if a fever of more than 103°F. (oral temperature) is allowed for fifty or more hours. These hours of fever are obtained most often after the patient has had eight to ten paroxysms of malarial fever.

It is imperative that patients who receive fever therapy be observed closely for the development of complications. If there are signs of cardiovascular collapse, manifested by persistent hypotension (systolic pressure less than 90 mm. of mercury) and persistent tachycardia, pulmonary edema and myocardial failure, fever therapy should be discontinued permanently. Malaria fever therapy produces some hepatic damage in practically all cases, but such damage is usually not of serious significance. If the icteric index rises steadily and jaundice is present, the treatment should be discontinued permanently. Moderate degrees of anemia are common, especially in cases in which the patient has malaria; if severe anemia (hemoglobin value less than 7.0 gm. per 100 c.c. and an erythrocyte count less than 2,500,000 per cubic millimeter of blood) is present, permanent discontinuance of fever therapy is necessary. Other complications, such as nephritis, pneumonia, manic states and cerebrovascular accidents, are uncommon but also necessitate discontinuance of fever treatment. Many patients become physically tired, weak and "washed out" with malarial therapy, and these individuals may obtain temporary remission of fever from administration of 75 to 150 mg. of thio-bismol (sodium bismuth thioglycolate). For permanent termination of malaria, atabrine (quinacrine hydrochloride) or chloroquine (7-chloro-4 4-diethylamino-1-methylbutylamino quinoline diphosphate) is administered.

The first evidence of improvement in the cerebrospinal fluid after treatment with either penicillin or fever is lowering of the abnormal cell count. This is followed shortly by decreasing values for protein. Abnormal complement-fixation and colloidal gold reactions may persist for months and years.

Specific Types of Neurosyphilis.—Suggestions for treatment of specific types of neurosyphilis, to be considered only as a guide at the start of treatment, are included in Table II. There are exceptions in every class of neurosyphilis. The cerebrospinal fluids of patients who have vascular neurosyphilis or gummas which involve the spinal cord and brain frequently are normal, and thus the status of the cerebrospinal fluid cannot be used as a guide to treatment. The greatest exceptions to the suggested treatments occur in the unusual instances of neurosyphilis in which the disease is clinically progressive and the cerebrospinal fluid is normal or nearly normal. In these cases penicillin should be administered and fever should be induced concurrently; however, the results of such treatment or of any treatment are generally poor.

Patients with an arrested or inactive type of spinal fluid should also receive special consideration. They are usually tabetic patients who may or may not have received previous treatment. It is doubtful that further treatment will improve the status of the cerebrospinal fluid, but a course of penicillin often will result in an increased sense of well-being and a gain in weight, together with a decrease in severity and frequency of gastric crises and lightning pains. The tonic effect of penicillin seems to be noted in most cases of neurosyphilis, regardless of the type.

TABLE II. SUMMARY OF TREATMENT OF SYPHILIS IN RELATION TO DIAGNOSIS AND CONDITION OF SPINAL FLUID

Diagnosis	Cerebrospinal fluid, group	Penicillin, units	Fever
A. Asymptomatic	I and II	6,000,000	No
	III	6,000,000	Yes
B. Meningeal	I, II and III	6,000,000	No
C. Meningovascular	I and II	6,000,000	No
	III	6,000,000	Yes
D. Vascular	Frequently negative	6,000,000	No
E. Tabes dorsalis (without optic atrophy)	I and II	6,000,000	No
	III	6,000,000	Yes
F. Tabes dorsalis (with optic atrophy)	I, II and III	6,000,000 to 9,000,000	Yes
G. Dementia paralytica with tabes dorsalis (taboparesis)	I and II	6,000,000 to 9,000,000	No
	III	6,000,000 to 9,000,000	Yes
H. Dementia paralytica (paresis)	I and II	6,000,000 to 9,000,000	Yes
	III	6,000,000 to 9,000,000	Yes
I. 1. Gumma	Frequently negative	6,000,000	No
2. Amyotrophic lateral sclerosis	I, II and III	6,000,000 to 9,000,000	No
3. Erb's paralysis	I, II and III	6,000,000 to 9,000,000	Yes
4. Epilepsy	I, II and III	6,000,000	No
5. Transverse myelitis	(See C, D and I, 1)		
6. Nerve deafness	(See C, D and I, 1)		
7. Optic atrophy	I, II and III	6,000,000 to 9,000,000	Yes

Observation and Further Treatment

The patients should be re-examined four to six months after the end of treatment with penicillin alone or with penicillin in combination with fever therapy. Such an examination should include the serologic tests for syphilis, re-examination of the cerebrospinal fluid and physical examination to determine the patient's neurologic and general status.

In cases in which the condition has responded favorably to treatment, the following effects are evident: the tonic effect of penicillin already noted, together with steady diminution of the more specific symptoms such as gastric crises, lightning pains, convulsions and mental aberrations. The spinal fluid exhibits improvement chiefly in regard to the cell count and the values for protein. The complement-fixation reaction and the abnormal curve of the colloidal gold test do not indicate response as soon as do the manifestations just mentioned. These latter two tests ordinarily are not considered to be valuable signs for or against the need of further treatment.

If there has been a satisfactory clinical response and if the cell count and the value for protein have become or have approached normal, no further treatment need be given at the time. The patient should then be re-examined at intervals of six months for the next two years and yearly there-

after. If the cerebrospinal fluid has been normal or has exhibited the arrested type of formula for two years after treatment, further examinations of the cerebrospinal fluid need not be made unless there is a clinical or serologic relapse.

In cases in which response to treatment has been unfavorable (1) there is no clinical improvement in the symptoms in which improvement should be found, (2) the symptoms are of increased severity or (3) in the instance of asymptomatic neurosyphilis, evidence of symptomatic neurosyphilis develops. The cerebrospinal fluid exhibits the same cell count and concentration of protein as it did before treatment, the values are increased or there is slight but insignificant diminution of cell count and concentration of protein. The lack of beneficial response to treatment may be shown either in the clinical symptomatology or the cerebrospinal fluid or both. If response to treatment is unfavorable, the treatment should be repeated.

Further Treatment.—For those patients originally treated with penicillin alone, another course of penicillin combined with induced fever should be given if the general condition of the patient permits use of hyperpyrexia. If the patient originally had treatment with fever and penicillin combined, subsequent therapy is ordinarily limited to further courses of penicillin. In exceptional instances more fever therapy can be given.

Patients who respond unfavorably should be investigated at intervals of four to six months, and treatment should be continued as long as clinical symptoms progress and the cerebrospinal fluid remains active, as shown by elevated cell counts and abnormal values for potein.

Summary and Conclusions

The diagnosis of neurosyphilis has been discussed with consideration of the broad clinical types of neurosyphilitic involvement. Some of the interesting historical descriptions and impressions of the early authorities are quoted.

The importance of correlating (1) the type of neurosyphilis, (2) the activity of the cerebrospinal fluid and (3) the general condition of the patient before determining therapy is stressed.

A table suggesting therapeutic procedures with penicillin alone or penicillin combined with fever is given, but this should be used only as a basic guide for the therapeutic requirements of an individual patient.

BIRTHS REMAIN HIGH IN 1948

The second largest number of births in the history of this country occurred during 1948. This information, released by Federal Security Administrator, Oscar R. Ewing, summarized data prepared by the National Office of Vital Statistics of the Public Health Service.

The number of live births registered during 1948 was estimated at 3,559,000 or only about 4 per cent below the all-time high of 3,699,940 for 1947. Of even greater significance are the figures which take into consideration the unregistered births. The total number of births (registered and unregistered combined) was estimated at 3,715,000 for 1948 and 3,876,000 for 1947. Only eight years earlier, in 1940, the last pre-war year, the figure was little more than 2½ million (2,558,000).

The 1948 estimated birth rate of 24.4 per 1,000 population was about 5 per cent below the final rate of 25.8 for 1947, but exceeded the 1946 rate (23.3) by almost 5 per cent. (These rates and all other figures which follow are based on registered births.)

Striking changes occurred in the birth rate during the postwar period 1946-48. Demobilization beginning in the last half of 1945 was reflected by extraordinarily high birth rates in the latter part of 1946. In 1947 the monthly rate declined from the peak rates experienced at the end of 1946 but was nevertheless at a high level throughout the year. The rates in the last half of 1948 were significantly higher than in the earlier months and about equalled the rates in the last half of 1947. When the monthly rates are corrected for "normal" seasonal variation, the rate changes during this period are further clarified.

Final 1947 birth rates on a residence basis are now available for each State and the District of Columbia. The State rates ranged from a high of 37.2 (per 1,000 population present in area) for New Mexico to a low of 22.8 for New York. The birth rate for half of the States and the District of Columbia fell within the range 25.0 to 30.0. The rates for fourteen States were below 25.0, while in ten States they exceeded 30.0.

The proportionate changes in the birth rates for each State between the last pre-war year, 1940, and 1947 show that fifteen States had increases of 50 per cent or more; fifteen increases of between 40 and 50 per cent; fourteen between 30 and 40 per cent; and four between 20 and 30 per cent. Greater proportionate increases were recorded in those areas which for many years have consistently had comparatively low birth rates.

DO WE KNOW WHERE WE'RE GOING?

E. H. O'CONNOR
Managing Director, Economics Society of America
Chicago, Illinois

BETWEEN the great things we cannot do and the small things we will not do the danger is that we shall do nothing.

On that premise I appear before you today in a sincere effort to arouse you to action, to urge you to recognize and understand the problem of progressive socialism which, if permitted to continue unabated, will eventually destroy our voluntary society and our free market economy.

Whether you realize it or not we are fast approaching socialization by taxation. We are just ten years behind England on the schedule planned by the designers of confusion who are bent on destroying the competition of private ownership. We have all been very smug and complacent. We have taken our freedom for granted. We have washed our hands of so-called "dirty politics." We have buried our heads in the sand while a small minority in our midst has been steadily undermining the foundations of our freedom for half a century. This blindness obscures the mind and causes the average business and professional man to be less perceptive and alert. The man who no longer grows in bone and muscle builds a fatty insulation not only around his middle but around his head. He is thickened against the acquisition of ideas, and the abstract principles over which the founders of the country labored and which must be understood for each to do his part to preserve liberty throughout the land.

Such, I believe, is the great issue of our time and this issue can be met if courageous men and women will now uphold private enterprise against collectivism in Federal, State, and local governments. Let us restore the American incentives to work, to "have and to hold"—the old rewards for producing more and better goods. Let us put a stop to the government's use of the money of taxpayers to compete against them—yes and above all—stop politicians buying votes with "Federal Aid" for such measures as governmental protection from the cradle to grave and socialized medicine.

The fabulous prosperity that has persisted throughout the country during the postwar era is beginning to produce a brand of economic thinking that America could very well do without. Fat pay envelopes and employment on a scale recently considered to be fabulous appear to be taking on the properties of an opiate that obscures facts and deadens the power of reason.

A feeling of exuberance and rose-tinted optimism is gaining headway and with it the adoption of policies and doctrines as nebulous as the illusions that produced them. Therefore, it is time to take stock in order to build a structure that will stand up under more stringent conditions.

A case in point is provided by the attitude of some federal payrollers and legislators toward a more comprehensive program of social security—a plan of government guardianship for everyone from the cradle to the grave. It seems we have an unlimited supply of reformers, humanitarians and would-be-managers-in-general who have a common notion that one has a duty to society, as a special and separate thing, and that this duty consists in considering and deciding what is good for other people. In their zeal they overlook the long history of man's struggle for freedom which clearly indicates that a part of the price he must pay for it is the willingness to assume a large measure of responsibility for his own well-being. Whenever men have endeavored to transfer their responsibilities to the shoulders of other fallible men calling themselves government, they have eventually reared a Frankenstein monster that has turned and devoured their political, intellectual and spiritual liberty. This earth was never intended to be a full and complete Utopia. The good Lord just didn't plan it that way. Didn't he say "Thou shalt earn thy bread by the sweat of thy brow?" That was not a primeval curse but a law of progress and any legislative scheme which trys to turn this law inside out will doom all to destruction. As we look back in our own history we recognize that struggle makes strength and no person's security can exceed his individual self-reliance.

Neither the insurance industry, the medical profession nor business in general have been sufficiently alert to the dangers of comprehensive national social insurance. The legislative and administrative history of social insurance throughout the world shows clearly that it is impossible to

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Address given before the Ramsey County Medical Society, the Hennepin County Medical Society and other interested groups at joint meetings held in Saint Paul, December 6, and Minneapolis, December 7, 1948.

Mimeographed copies of this address may be obtained upon request through the office of MINNESOTA MEDICINE.

accept one part of social insurance without ultimately falling prey to the whole scheme; that social insurance insidiously pervades the entire body politic like a cancer, and that benefits bestowed as social insurance rights are purchased by surrendering human rights. In other countries legislation for national social insurance has always meant subjugation of the individual to the Government.

When Bismarck instituted the payroll tax and compulsory insurance, Prof. Adolph Wagner, his economic advisor, said "the plan was to raise revenue, control the people, and redistribute income." The state was to take over control of banking, insurance, communications and utilities. The workers were to be induced to agree to compulsory taxation and bureaucratic control in return for small social insurance benefits. In other words, the state bought the workers with small bribes and seized control.

Bismarck's "social" insurance laws were acclaimed as the "high water mark of German State Socialism" sixty years ago, but they were laws embracing political and economic devices, rather than genuine social measures. The point has been well made that social insurance is neither social nor insurance.

Unfortunately, at the present time, there are many persons—sound citizens, trusted members of the community—who believe that a "little social security" like a "little inflation" is good for the country. But the question arises whether one can take a "little social security" without desiring larger amounts. The trouble with social security is that small doses develop an insatiable craving for larger doses. No social security program, however undesirable, has failed to expand, and in its expansion it penetrates the entire economy ever more deeply. The triple curse of social security is the spiral of political promises, the weight of bureaucratic conflict, and the crushing burden of taxation.

I believe I can make the statement, without fear of contradiction, that a large segment of our people have been fast asleep and completely unaware of the octupus-like movement of government compulsory insurance both at the state and federal levels. We bury our heads in our daily tasks and leave our tail feathers exposed to the skirting gales of political controversy. We all have a great deal at stake in the movement to expand our social security act. Not only should our interests be motivated with the desire to keep and maintain our business free of further governmental interference, but greater than that we must be ever alert to preserve the principles of our competitive voluntary enterprise system, which the so-called "intellectual" in his supreme conceit would destroy.

It is of the greatest importance to realize at this time that every effort is going to be made to do three things in the Social Security field, namely: (1) expand Social Security coverage for old-age and survivors' insurance to cover presently excluded groups and at the same time to increase the taxes and raise the taxable wage level from $3,000 to $4,800; (2) introduce, and if possible, enact legislation for federal cash sickness benefits under a Federal-State arrangement comparable to the arrangement now existing in connection with employment programs; and (3) introduce, and if possible, enact legislation for cash disability benefits to be administered by the Federal Government as a part of the Old-age and Survivors' Program.

The strategy of the Federal Government and of non-federal advisors is to extend the coverage to all or nearly all the population in a field which is considered non-controversial, namely, old-age and survivors' insurance. The effect of this extension of coverage has powerful repercussions when you come to later programs for additional benefits. It means that such benefits will then automatically apply to the population which has already been brought under the Social Security umbrella. Few persons see that once you accept the principle that governments, either Federal or State, have the primary responsibility to provide support for individuals who are out of the labor market, either permanently because of old age or temporarily because of unemployment, you will ultimately be compelled to accept all the major Social Security programs. Thus, logically, you will be compelled to accept the cash sickness benefits program because unemployment due to sickness is akin to unemployment due to lack of a job. Similarily, unemployment due to permanent disability is akin to unemployment due to old age; and, consequently, that risk must be covered by the Government. But once you have set up Government insurance programs to pay cash benefits during periods of temporary sickness or of permanent disability and once you have set up trust funds for those programs, you will

inevitably be driven to accept a Government medical care program not so much for the benefit of the sick and disabled as to protect the respective cash benefits insurance funds. It will be argued that the majority of workers are not able to pay for doctors when they are sick and that, consequently, they will be out of work longer than will be necessary and will be drawing sickness benefits. It will also be argued that many persons who will leave the labor market on the ground that they are permanently disabled and will, therefore, draw cash benefits as long as they live, might be restored to a certain degree of earning capacity if only the Government would provide the medical care they need. If that unhappy day ever arrives, a goodly proportion of the physicians of this country will devote their entire time, not to improving the health of the people, nor caring for the sick, but simply carrying out the social insurance task of certifying patients for cash benefits during sickness and permanent disability.

The adoption of a national system of sickness insurance would involve the extension of federal control into the lives of nearly every American in a measure unprecedented in the history of the nation. It would extract taxes from every pocketbook, and of necessity swell the proposed health, education, and security department into one of the biggest and most powerful government departments the country has ever known. In short, it would be straight state socialism with ultimate power over all the people vested in the Federal Government.

President Truman has never presented a budget to the American people on the costs of his social security proposals yet his program would add billions to the cost of social insurance. Sweeping increases in benefit payments, the extension of coverage to upwards of 20,000,000 additional persons and the inauguration of new types of social insurance are provided in the President's program. To finance this wholesale expansion of social security an immediate sharp increase in Federal payroll taxes and eventual higher state unemployment insurance levies will be required. What the social security proposals mean to business is illustrated by the proposed changes in the Federal payroll tax for pensions. The tax rate would be raised from 1 to 1½ per cent and the impost would be made to apply to $4,800 instead of $3,000 of earnings. For the average employer, this would mean an increase of 60 to 70 per cent in Federal payroll taxes. At the same time, extension of coverage would make numerous additional employers subject to the tax. Business is on the eve of a period of intensified competition and narrowing profit margins. A jump in social security taxes may seem bearable at the moment, but when profits decline they will become a grievous burden.

The far-reaching consequences of social security are well illustrated by its impact upon savings and investment. The federal trust funds are now collecting $2½ billion more than they pay out in benefits. This vast sum is 25 per cent of the annual liquid savings of the people as estimated by the Securities and Exchange Commission. This large segment of the nation's savings is not available for investment in private enterprise. It must be placed in Government securities. Do we want to divert the larger part of the liquid savings of the American people into Government funds that can only buy Treasury Securities? This is one of the many related questions to which Congress has given little consideration. It is one of the more powerful reasons for further unbiased study, and at least obtaining the opinion of the American people before Congress is asked to vote upon the President's proposals for a sweeping expansion of the social security program.

Lincoln is quoted as saying "The legitimate object of government is to do for a community of people whatever they need to have done but cannot do at all or cannot do so well for themselves in their separate and individual capacities. In all that the people can individually do as well for themselves the government ought not to interfere." Let us see what the people of this Country have done in protecting themselves against the important hazards of life.

According to a recent study, life insurance protection in force in private companies now exceeds $200 billion, covering more than 75,000,000 policyowners with total assets of over $52 billion. According to the Health and Accident Underwriters Conference more than 45 million persons were covered under some form of accident and sickness insurance at the end of 1947 with a total annual premium volume of over $800 million. To this may be added many more millions for hospitalization coverage through Blue Cross and protection by prepayment medical plans.

Roughly if we start with the basis of pro-

tection built up over a period of more than one hundred years by private insurance companies and organizations and add to this the savings established through savings banks, savings and loan associations, real estate, investments and by the purchase of war bonds we can total up resources committed to the protection of our people, amounting to over three hundred billion dollars, which, I submit to you, is an amazing figure. Of greater significance is the unhampered opportunities which made it possible to accumulate so large a reserve. Any tampering with these opportunities may have fateful consequences. It would probably be difficult to retain thrift, ambition, and industry under a comprehensive system of compulsion such as social security. It is difficult, therefore, to see how it can be argued that present facilities and opportunities are so inadequate as to call for an entirely new system having economic and political implications which can destroy America as a land of freedom and opportunity.

The advocates for government compulsory sickness compensation and medical care are subjecting the public to a barrage of twisted facts which distort the situation. They argue that the statistical sample examined by the draft boards in the last war was representative of the country's young adult male population. That is not true as was proven by Dr. Maurice Friedman in his testimony before the Senate Subcommittee on Health. In the first two years of the war, the draft boards examined about ten million men and rejected 36 per cent of them. But during the same period, over two and one-half million enlisted voluntarily. If these men had gone through Selective Service, the over-all rejection rate would have dropped automatically from 36 to 28 per cent.

Then of the manpower that remained after voluntary enlistments, more than one-third received deferments because of essential occupation or dependency. In other words, Selective Service examinations were limited to those young adult males who did not volunteer and who did not rate deferments. That's scarcely a true cross-section.

In breaking down the "why" of draft rejections we find that 22 per cent of the conditions were beyond the province of the medical profession—illiteracy and mental deficiencies; 47 per cent of the conditions were not preventable or remediable—heart ailments, defective vision, amputations; 3 per cent were possibly preventable such as tuberculosis; 11 per cent were not preventable but correctible—tonsils, kidney stones, varicose veins, hernias; 5 per cent of the conditions were preventable and correctible—otitis media, teeth, hearing. From this breakdown it is apparent only about 19 per cent of draft rejections could have been influenced by medical care and then we must assume that the individual would have sought medical attention, that he would have accepted the doctor's recommendations, and that the treatment would have been 100 per cent effective in every instance. Any statement that one-half to two-thirds of such defects are preventable or remediable is utterly false and further it proves that selective service statistics have no place whatsoever in any honest discussion of the deficiencies existing in our medical services or the need for compulsory government sickness compensation.

Now the same individuals are emitting loud wails over the dire implications of the present draft rejections. The figures show that in the nation's ten largest cities, rejection of young men called up for pre-induction examination has run, on the average, at 62 per cent. The rate ranged from a high of 87.5 per cent in New York to a low of 37 per cent in Los Angeles. In Chicago, the nation's second largest city, it was 85 per cent. Although Selective Service Director Lewis B. Hershey put no such interpretation upon them, these figures were immediately seized upon by the national health insurance crowd as evidence that our human resources were in terrible shape.

Actually, of course, the rejection data do not prove anything of the sort. The men called up during the first few weeks of the draft were in the twenty-four to twenty-five year-old groups. Veterans are exempt from the new call, so that those examined were largely those who were rejected for service in World War II on physical or mental grounds or because they were engaged in essential work. Among them were large numbers of 4F's who would be accepted now only if they had overcome the handicaps which brought about previous rejection. Director Hershey says the results are just about what draft officials expected.

I think you will agree that the basis on which military rejections are made does not suggest that we are rapidly going to pot physically and

mentally. As any actuary will tell you, quite the reverse is true: the average age of the population is increasing rapidly—so rapidly in fact that it will soon be a social security problem all by itself. Recently the Federal Security Agency experts took a look at death rates in this country and came up with data showing life expectancy today to be greater by about twenty-four months than it was a brief seven years ago. The average American born in 1948 can expect to be here in 2015, regardless of sex or race. Yet while improved medical care is prolonging life the birth rate has declined. At the turn of the century only about 3 million Americans were sixty-five or older. By 1940, their number had increased to 9 million. When 1960 rolls around citizens in the sixty-five or over group will number 14,000,000; at the century's end the figure is expected to be 21,500,000 or more. If the F.S.A. figures on longevity and births are reasonably reliable, a security system that would provide even more subsistence for 21,500,000 men and women over sixty-five would be an intolerable burden for the steadily decreasing number of employable citizens who would have to be taxed to support not only social security but all other government activity. It might be exercising good judgment to permit the aged to continue working to age seventy instead of planning for social security pensions at sixty-five or sixty, in view of our steadily increasing rate of life expectancy which is now sixty-seven years.

Now let us review a few pages of history: Bismarck, the Iron Chancellor, introduced compulsory social security in Germany, not as a social measure, but as a means by which he sought to stem the rising power of the labor party and to retain power in conservative hands. He made the state responsible for the industrial masses, protecting them against fear and want. The only price the masses seemingly had to pay was to protect the Hohenzollern dynasty against the liberal opposition, by voting the funds for a strong central government. With the introduction of State socialism, German liberalism was finished. The Government gave "benefits" to labor, industry, farming, banks. Liberal arguments could not defeat these vested interests.

In 1911, Britain adopted the German system of old-age and sickness insurance. By 1924, Britain was taking the lead in socialization, "insuring" workers against unemployment before the German Republic did. Lloyd George had transformed the Liberal Party into a middle-class Socialist Party. It was, of course, the end of the liberals. The Labor Party could promise more. As the English turned to the philosophy of statism, made glamorous by Prussian professors and generals, as government bureaus and cartels and other vested interests grew, the English lost their independence to the State.

In the last sixteen years, we too have seen business, education, labor and local government in this country become accustomed to gifts from the Federal Government. Our danger is not from a dramatic abandonment of liberalism, but from a leaking away of principles, a little compromise, with this spending program and with that, until today both political parties are as completely enmeshed in its commitments to mass supporters as were ever the New Dealers.

There are some people who quibble over calling compulsory sickness insurance "socialized medicine"; some who claim that a little socialism won't hurt. Call it what you will, but you can't be a little bit socialistic any more than you can be a little bit pregnant. Either you are or you aren't. Compulsory sickness insurance can lead to only one result: socialization of medicine and eventual socialization of all fields of endeavor. Mr. Justice Brandies who in his day was considered an extremely liberal thinker said "experience should teach us to be most on our guard to protect liberty when the government's purposes are beneficient."

Here it might be well to give some consideration to the cost of a comprehensive system of social security. We know from experience with foreign systems that the costs always exceed original estimates. Taxes rise. In Germany, we find that the financial cost of social insurance increased more than one-hundred times over a period of less than fifty years; in Great Britain more than seventy times in less than forty years; in Canada more than twelve times in a little over twenty-five years; in New Zealand it doubled over a short period of ten years.

In our own country we find that the ultimate cost of a comprehensive system of social security by compulsion would be so great that it might require each gainfully employed person to work ten weeks at forty hours each—a total of four hundred hours a year, or more than 25 per cent of an annual work year—just to pay for social security. The ultimate cost of the new British system has been estimated at 24 per cent of gross

wages. This will give you an idea of the importance of the financial cost of social security. Without exaggeration it may be stated that no system of social security in any country has ever remained as small or as isolated as contemplated originally. Invariably, it has become a snowball making for greater cost, higher rates, wider coverage.

Labor's major interest in social security and governmental welfare programs dates back to the Wagner Act of 1935 which gave tremendous impetus to union organization. Members flocked to join. Gradually, the unionization process became more difficult, especially as unions worked deeper into the mass production industries. It became necessary to stage hard-fought organizational campaigns. These met not only with employer opposition, but also with worker inertia. New programs had to be devised, new goals set forth. Union leaders began to turn to government social security and medical care programs. They call for a broadening of social security coverage to encompass virtually all employes in the country, for new types of benefits, and for increased benefits. Together with the union drive to attain greater benefits from private employers, these demands foreshadow a future development in labor thinking which will seek to tie in such private program directly with federal security laws.

In Germany, labor thought it could control its social program and ended up by being controlled by ruthless dictatorship. In Russia, labor thought it could control its own destiny and ended up in a monopolistic economy. In New Zealand, the predominance of labor resulted in a socialistic form of government and economy. In Great Britain, labor which is chiefly responsible for the social security program, may feel again that it will be able to retain political control. And again, if history repeats itself, as it so often does, labor may see its ends defeated by the trend toward a monopolistic form of government. What seems to be overlooked by labor in this country is that when these social security programs cover the entire population, everyone will be up to his neck in compulsion and taxes. Once completely under Government control, labor will go the way of labor in other countries.

Many persons had high hopes for what might be accomplished by this program of social security. Few foresaw the advent of a vast Federal bureaucracy that sprang up almost overnight and subsequently turned into a powerful pressure group, demanding expansion of the program, higher taxes and more power. Do we want more forms, more regulations, more reports and more taxes?

To the businessman I urge you to analyze the whole social security program and ask yourself if you want any more of it. To the doctors and dentists I say "If you cannot see that there is a three alarm fire in your professional abode at the present time, you are likely to find yourself out in the cold staring at the ashes of what was once a beautiful practice and a free existence."

In closing I will read a statement made last year at Bogota, Chile, by a member of our State Department, Dr. Charles G. Fenwick, who registered a strong protest against the principles which had been proposed in the form of an inter-American Charter of Social Guarantees. He said:

> "What is needed today is a clarification of the objectives which we have in view in legislating for the protection of the workers. *The tendency of the present day is to make man a mere cog in the great machine of the state. In order to obtain security he must surrender liberty. In order to get protection against the industrial machine, which destroys his human personality, the worker must have recourse to the state; and the state then tends to become his master, substituting one form of slavery for another.* I could wish that the Charter might reaffirm the ideal of a free man, working under free conditions, paid a just wage which would enable him to support his family and to own his own home under conditions of dignity and security. *The liberty of the individual is being lost in the huge size of labor unions, in the dictatorship of industrial combinations, and in the all-comprehensive legislative authority of the state.* Our problem it seems to me, is to formulate a philosophy of social relations, to show the world how the security of the worker can be obtained without loss of his liberty."

VACANCIES IN MEDICAL SERVICE CORPS

The Army Medical Service Corps still has a number of vacancies in the grades of 2nd and 1st lieutenants in the following specialties: bacteriology, biochemistry, parasitology, serology, entomology, nutrition, toxicology, industrial hygiene, industrial hygiene engineer, optometry, psychiatric social worker, clinical psychology and sanitary engineer, under the provisions of Department of Army Circular 210 dated July 14, 1948.

Although most of the provisions of Circular 210 were suspended as of February 15, 1949, pending completion by the Department of the Army of a study of remaining requirements, applications for reserve commissions in most grades are still being accepted by the Medical, Dental, Veterinary, Nurse, and Women's Medical Specialist Corps, as well as by the Medical Service Corps for appointment in the grades of 2nd and 1st lieutenants.

BENIGN STRICTURES OF THE BILIARY PASSAGES

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BENIGN strictures of the biliary tract constitute a very serious problem in the field of surgery. The patient suffers from a chronic and most distressing ailment which with the best of treatment carries a disturbingly high morbidity and mortality. Too, this is a condition in which bacteria, viruses, constitutional tendencies, inner conflicts, or acts of God play very little of an etiological role of primary significance. Here the hand of man, the surgeon, in fact, is usually causative, which renders this problem of first importance to all who undertake surgery of the gall bladder and bile ducts. It is the purpose of this presentation to discuss briefly the causes and prevention of such strictures, along with a few words about the general disease picture and its care, to present some of the more recent surgical concepts and experiences in the treatment, and to report a case in which repair of a stricture was effected with the use of a vitallium tube.

Etiology and Prevention

Flickinger and Masson, reporting a summary of 188 cases, pointed out that in 181 (96 per cent) cholecystectomy had been performed, and in five other cases some other biliary operation had been done, leaving only two patients without a history of biliary operation of some sort. In not all of these, of course, was it possible to determine definitely that actual trauma to the ducts was the etiological factor. In about 12 per cent of their cases a very extensive chronic obliterative cholangitis was found. Whether or not this condition followed a previous injury was impossible to tell, but in one patient in whom it was definitely known that the common duct had been injured, just such an extensive obliterative inflammatory process was found. In Cattell's series of 123 patients, operative injury was thought to have occurred in 80 per cent of all cases. Other authors (Cole et al, Walters and Lewis, Walton, and Eliot) give figures approximating these, namely, that from 75 to 90 per cent or more of cases are directly related to previous operation. Agreement, then, is quite general that trauma to the ducts at the time of biliary tract operations, usually cholecystectomy, is by far the most common cause of these strictures.

The actual incidence of strictures of the biliary tract is very difficult to determine with any accuracy. It would seem, however, from the increasing number of reports in the literature that the incidence is definitely growing. Cattell stated that in over 5,000 gall-bladder operations at the Lahey Clinic, only one operative stricture had been produced. This is the only statement we have been able to find in the literature where a figure is given for the actual incidence. All articles consulted, however, agree that this type of case is being seen with increasing frequency at the various medical centers. By far the best treatment of the condition is prevention, where a few extra moments of care, patience and diligence may save the patient untold misery, financial burden and possibly his life.

At the risk of appearing somewhat elementary, we wish to re-emphasize some of the points in the technique of cholecystectomy, because neglect of these principles can easily lead to trauma to the biliary tract, resulting in stricture. In discussing benign stricture, Walton aptly points out that one great principle of surgery especially applies here, that no structure in the human body must ever be divided until it and its immediate surroundings have been clearly displayed. Further points which deserve reiteration are these:

1. Safety in gall-bladder surgery is strongly dependent on good exposure, which in turn is a result of adequate relaxation of the abdominal wall, proper placement and length of incision depending on the habitus and degree of obesity of the patient, and on walling off and retraction of the adjacent organs.

2. The presence of acute inflammation may render recognition of the anatomic relationships difficult or even impossible, and may also render the tissues much more friable. It is generally agreed that cholecystostomy is not nearly as satisfactory a procedure from the curative standpoint as cholecystectomy, but it may be far more preferable to drain the gall bladder than to run the risk of injury to the ducts. In the presence of

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acute inflammation a tie on the cystic artery may cut through repeatedly. In such cases, a hemostatic clamp can be left on, the wound closed around it, and the clamp loosened and removed in four or five days.

3. Perhaps one of the most frequent causes of trauma to the ducts is the presence of hemorrhage that is difficult to control. A spurter, usually the cystic artery, is divided, and immediately the depths of the wound fill with blood. Blind attempts to clamp the vessel will almost inevitably result in damage. If the ducts are damaged, it is a catastrophe of the most unfortunate type, for in finding the location of the bleeder it usually means that the hepatic duct will be clamped, and this type of injury is the most difficult to repair later. Digital compression of the hepatic artery in its course anterior to the foramen of Winslow, between the thumb and forefinger of the surgeon or first assistant, will control the hemorrhage; the field can be wiped dry, and the bleeding vessel found and accurately controlled.

4. If the gall bladder is pulled upon and is relatively mobile, the common duct may be drawn up in a loop, or "tented" in such a way that its first part runs in line with the cystic duct and is mistakenly divided. This is especially prone to occur if this is not borne in mind when resection of the gall bladder is done from above downward, for then not only are the parts more mobile, but the field is obscured by blood escaping from the raw surface of the liver.

5. In many cases of cholecystitis, especially where there has been obstruction of the cystic duct, the gall bladder may become dilated and the inflamed Hartman's pouch cover and become adherent to the cystic duct. The common bile duct then appears to issue from the inner side of the pouch and is divided in the belief that it is the cystic duct. A very similar condition occurs if the pouch is still larger and is adherent to the common duct itself.

6. The very frequent occurrence of anatomic variations in the biliary ducts and their vascular supply must be kept in mind at all times. Abnormalities of the ducts and adjacent vessels have been reviewed in detail by Eisendrath, Flint and others, and their illustrations give an excellent idea of some of the difficulties arising from anatomic variations which may be encountered. For example, in 12 per cent of individuals there are two cystic arteries, both of which do not always arise from the right hepatic. In only 75 per cent do the cystic and hepatic ducts unite at an acute angle. In 17 per cent the cystic and common ducts pursue a parallel course for varying distances before they unite, and in 8 per cent the cystic duct makes a spiral twist around the front or back of the main hepatic ducts. These are only some of the more frequent variations. Others less frequent, while only rarely encountered, need to be met only once to give rise to disastrous results if too blind faith is placed in the rules of the "normal" anatomy of this region.

Another point that deserves mention is the matter of the indications for the cholecystectomy. Flinkinger and Masson found that in their series of cases of stricture of the ducts, cholecystectomy was not associated with the presence of gallstones in at least 11 per cent and possibly more. Traumatization of the ducts does not occur frequently, perhaps, but when it does occur, it is a real tragedy. The possibility of this dire complication should always be considered in evaluating the indications for cholecystectomy, especially in the absence of calculi, and should give the surgeon serious pause in considering the removal of the gall bladder.

Diagnosis

As to the diagnosis of these conditions, there is not usually much difficulty. Walters and Snell state that 99 per cent have either jaundice or an external biliary fistula. The cases fall into three major groups. There are those in whom jaundice develops quite promptly after operation, deepens and is constant. In another group, there is prolonged biliary drainage after operation, which may intermittently cease, during which cessation the patient becomes jaundiced and develops signs and symptoms of ascending biliary tract infection. In the third group, which is the smallest, the patients pursue a perfectly normal postoperative course, and then, after a period of months or even years, insidiously develop jaundice.

The preoperative preparation of these patients sometimes requires rather extensive effort and application on the part of all concerned. Every attempt must be made to evaluate the functional status of the liver and to restore it to as nearly normal as possible. In cases of long standing, the renal function may be impaired, and an effort should be made to improve this, although this is difficult; such impairment is of serious prognostic

import. In those patients with external fistulas, large amounts of electrolytes are lost in the biliary drainage, and these should be replaced by the liberal use of bile salts and sodium chloride by mouth. The refeeding of bile will be found a disagreeable and usually unsuccessful endeavor. The prothrombin time should be brought to normal or as nearly so as possible by the employment of large daily doses of vitamin K, with or without bile salts. The patients should be given a high carbohydrate, high protein, and low fat diet. Extra glucose should be provided parenterally, and a high carbohydrate diet, for the liver with good glycogen stores will withstand anesthesia much better. Large daily doses of the vitamins are to be used, especially thiamin and other elements of the B complex. Amino acid preparations and blood transfusions also may be necessary. In the seriously ill patients, those who have had multiple operations and long-standing jaundice with evidence of impaired liver function, a period of two or three weeks of preparation may not only be desirable but absolutely essential.

Treatment

It has been often repeated that most surgeons of wide experience probably have injured the common duct on at least one occasion. This occurrence is unfortunate, but even more unfortunate is the failure to recognize and treat the injury at the time. In a divided duct the upper end is easy to find, for it leaks bile. The lower end may be more difficult to locate but it should be sought for until found, for it will never be any easier to identify than it is immediately after injury. The two ends of the divided duct should be united by end-to-end anastamosis over a T-tube. Pearse and Cattell urge that the T-tube be brought out through a separate incision in the duct, so as to avoid trauma to the site of repair when the tube is removed. A duct that has been only partially crushed should be allowed to heal over a tube. If there has been extensive crushing or maceration, excision of the damaged area should be performed and end-to-end anastamosis effected.

If the injury to the duct is discovered during the postoperative period, unless the secondary operation is performed within a few days, it is better to wait until the inflammation and edema subside somewhat so that the surgeon may have pliable structures to deal with. Cattell feels that many of the failures in repair are due to too early intervention; if an external biliary fistula persists there is no urgency, as long as the lost electrolytes are replaced, and definitive surgery may be postponed at least three months. However if the patient develops a deepening jaundice, such delay will not be well tolerated, and operation should be performed earlier, in four to six weeks.

The multiplicity of methods that may be found in the literature for the treatment of benign strictures of the biliary tract amply testifies that there is no entirely satisfactory method, and no one method is applicable to all cases. There are certain general principles that underlie a successful repair regardless of the method. Accurate approximation of mucosa to mucosa should be sought, whether this be mucosa of duct to that of duct or to that of the gastrointestinal tract. This should be accomplished without tension. The leaving of a defect in the biliary duct should be avoided, for although this may give an excellent result initially, the formation of scar tissue in the defect, and its slow contracture, will inevitably result in reformation of the stricture. The repair should be performed over a tube or mold of some type, which should remain in place for at least several months. This maintains an adequate opening during the period of initial healing, and prevents contracture of surrounding fibrous tissue. If a T-tube is used and there is enough duct available, the vertical limb should be brought through a separate small incision in the duct. Any type of tube used in the repair should be anchored in the duct. Tubes which extend through the ampulla of Vater, or into the lumen of the gastrointestinal tract in those repairs where the duct has been anastomosed to the bowel, will usually pass in a short time, irrespective of type of anchorage.

The ideal, of course, is the restoration of the structure to as nearly normal an anatomical picture as possible. If sufficient duct remains above and below the site of the stricture, this condition can usually be fulfilled. Unfortunately those cases in which there is a small localized stricture are much in the minority. Cattell describes a procedure which has been employed at the Lahey Clinic in their most recent cases, by means of which distal duct can almost always be obtained. This consists of full mobilization of the duodenum and head of the pancreas, and dissection of the intrapancreatic portion of the common duct from its pancreatic bed, thus giving 2.5 to 5.0 cm. of distal duct with which to work. This is an ad-

mittedly formidable technical procedure, but apparently gives excellent results when feasible.

In cases where duct-to-duct approximation can be obtained, there is a good deal of disagreement as to the material of choice to be used as a supporting structure. Short rubber tubes of the Sullivan type have the following disadvantages: they are passed within a relatively short time and signs of an obstruction usually develop, although there are some exceptions; rubber usually begins to deteriorate in a year or so; rubber acts as a foreign body; there is a great tendency for the deposition of bile salts in the lumen of a rubber tube. Rubber T-tubes will, of course, not pass, but are open to the objections inherent in rubber. They have the advantage that if deposition of bile salts in the lumen does take place, the tube can be removed without the necessity of major surgical intervention. Pearse introduced the use of the preformed vitallium tubes. Their advantages are that they do not deteriorate, the vitallium is well tolerated by the tissues, does not act as a foreign body, and there is less tendency for the precipitation of bile salts. However, being of cast metal, they cannot be altered at the time of operation; they will occasionally pass. It was at first thought that the deposition of salts in the lumen would not be an objection, but it is evident from recent reports that this does occur. Once plugging has occurred, with the concomitant signs and symptoms of biliary obstruction, the tube must be removed by intra-abdominal exploration. In 1945, Pearse cited twelve cases, from a series of 208 collected cases, in which the tubes became secondarily obstructed, an incidence of 5.7 per cent. Neibling and Walters in September, 1947, stated that nine tubes had become obstructed out of seventy-four cases in which they had been used, an incidence of 12.3 per cent. One might speculate on a comparison between these figures, and the possible incidence of re-exploration necessary for strictures which reform after the removal of plugged T-tubes. It would seem that the vitallium tube is still worthy of a place in the armamentarium of the surgeon treating biliary strictures. A procedure which gives presumably satisfactory results in 94.3 per cent and 87.7 per cent of cases, respectively, is at least deserving of further trial, especially in a field where perfect results are notoriously difficult of attainment.

In this connection, the work of Best is of great interest. In 1938 he described a so-called biliary flush regime in the non-operative management of the overlooked or remaining common duct stone. Recently, he suggested the application of this regime to patients whose biliary tracts have been reconstructed over a vitallium or other tube, to prevent the formation of a precipitate in the tube, and remarks that if corrosion and encrustation do develop, the thinner bile makes an easier exit. He uses the three-day biliary flush once a month indefinitely, the details of which are given to the patient as follows:

1. Take three bile salt tablets (procholon or decholin) after each meal and at bedtime for three days.
2. Take one teaspoonful of magnesium sulphate in water each morning.
3. Take two tablespoonfuls of pure cream or olive oil before noon and evening meals and at bedtime for three days.
4. On the first day, place a nitroglycerin tablet (1/100 gr.) under the tongue before each meal.
5. On the second day, dissolve an atropine tablet (1/100 gr.) in a little water and take before each meal.
6. On the third day, repeat the nitroglycerin tablet as on the first day.

Naturally, if the choledochal sphincter mechanism is not functioning, as in the cases of anastomosis of biliary tract to gastrointestinal tract, it is not necessary to use the antispasmodic agents.

In cases where no distal duct can be obtained, or where there is little or no proximal duct, union between the biliary tract and the gastrointestinal tract must be effected if at all possible. Formerly, in those cases with little if any proximal duct, an external fistula was formed, and then this was later transplanted to the duodenum or intestine. The results were very disappointing, for contracture of the fistulous tract took place very frequently, with biliary obstruction. The procedure has been largely abandoned except as a desperate measure of last resort, where other more satisfactory procedures cannot be done. The usual procedure in union of the two systems has been choledochoduodenostomy or hepaticoduodenostomy. Cattell considers hepaticojejunostomy the method of choice. Allen described an ingenious method of repair, based on the Rous en Y principle, turning in the serosa and anastomosing it to the proximal duct, with a temporary catheter brought through the anastomosis. Cole et al utilized similar methods, but produced valves in the defunctionalized jejunum, by infolding it, to prevent reflux of intestinal content, which is thought

by many to be of serious consequence in the etiology of the cholangitis. The latter is a frequent complication.

Postoperatively, the treatment is similar to that of any biliary duct surgery. The parenteral administration of vitamin K is continued, with frequent checks of the prothrombin time, for at least one week. The fluid and electrolyte balance of the patient should receive the closest attention, and there should be free use made of blood transfusions. Large amounts of vitamins, especially thiamin and the B complex, are given. Drainage from the wound is commonly encountered, but if it has been possible to attain a satisfactory repair, this will cease within a maximum of two weeks. Bile salts are given during the first week. If a tube remains within the biliary system, the biliary flush regime mentioned by Best should be employed, and it is probably well to give a cholagogue as a daily routine in addition. If a T-tube has been used, this should be irrigated twice a day indefinitely, and it should be left in place six months to a year, preferably the latter.

Case Report

This individual is a married woman, forty-four years of age. Her family history and past history were irrelevant except for the following:

Eight or ten years ago she began to have indigestion from fatty foods, consisting of gas, belching and abdominal distention. This increased in severity and soon became associated with attacks of pain, colicky in nature localizing mainly in the right upper quadrant of the abdomen. She had never been jaundiced. In December, 1945, a laparotomy was done elsewhere for the purpose of removing the gall bladder, although she was never told exactly what procedure had been carried out. A few days after the operation she became jaundiced, the urine became dark and her stools clay colored. The jaundice gradually deepened and she states that her fever went to 104°F. About two weeks postoperatively the wound began to drain bile and she felt some better. The jaundice faded somewhat, and she was soon able to be up and about although the drainage of the wound was very profuse.

This patient was seen a year after the operation, and during this time the wound had drained continuously, the jaundice had been more or less constant but of a moderate degree. While she had been up and about most of the time, her strength and weight did not return to normal. She had a great deal of itching of her skin. She still had much indigestion from fatty foods.

Physical examination showed a woman forty-four years of age, with a moderate jaundice. There were many scratch marks over her skin from the itching. She was somewhat obese, being 67 inches tall and weighing 154 pounds. Her normal weight was 170 pounds. General examination was negative except for a high right rectus incisional scar, through the central portion of which oozed clear bile.

Laboratory studies indicated a mild secondary anemia (hemoglobin 72 per cent) and an obstructive type of jaundice (serum bilirubin 18.0). Other laboratory findings were irrelevant.

After proper rehabilitation with transfusions, administration of vitamin K, liver, iron, et cetera, exploration of the abdomen was done on December 24, 1946. The previous scar was removed, and after considerable dissection of many fibrous adhesions, the biliary fistula was followed to its origin. The liver appeared normal. During the course of the dissection, the gall bladder was found but was necrotic and wrapped in omentum. A small perforation in the fundus of the gall bladder connected to an adjacent portion of the lesser curve of the distal part of the stomach, allowing a small amount of bile to gain entrance to the intestinal tract. An attempt was made to identify the cystic duct but this, along with the entire visible portion of the common duct, was obliterated. The biliary fistula was then seen to arise from the cut ends of the two hepatic ducts. After these were clearly defined, a vitallium tube, Y-shaped, was used to reconstruct and make possible the continuity of the biliary tract. One arm of the tube was placed in the hepatic ducts and the vertical section in the divided distal end of the common duct. The remainder of the gall bladder was then removed.

Convalescence was essentially normal. The jaundice rapidly cleared up, there was no drainage from the wound, and the urine and stools soon became normal. She left the hospital on the twelfth postoperative day. Advice was given her as to biliary flushes as described, and she has now remained completely symptom free for two years and two months after the operation. There has not so far been any evidence of attacks of cholangitis or hepatitis.

Summary

1. The causes and prevention of benign strictures of the biliary tract, exclusive of congenital lesions, have been discussed, along with a few words about the general disease picture and its care.

2. Too great emphasis cannot be made of the fact that the great majority of these lesions are man-made, and therefore preventable.

3. Some of the more recent concepts in the surgical correction of these conditions have been presented.

4. A case report is given in which reconstruction of the biliary tract was carried out using a vitallium tube, resulting in a successful outcome of an individual whose common duct had been severed twenty months previously during cholecystectomy.

(References on Page 277)

COLLES FRACTURES AND THEIR TREATMENT IN GENERAL PRACTICE

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COLLES fractures, next to fractures of the ribs and fingers, have been stated to be the most frequent of all fractures and, because of this frequency, have for the most part fallen into the hands of the family physician for treatment. It is common, particularly in country practice, to see a great variety of deformed and chronically painful wrists. This is unquestionably due in a great part to the fact that the physician has been too easily satisfied with a reduction which is inadequate or that proper x-ray diagnosis, both preoperatively and postoperatively, has not been obtained. The greater percentage of these fractures are associated with marked edema and swelling, which necessitates careful diagnosis and handling. In other instances where the deformity is not too evident and is masked by slight swelling, a bandage or cast has been applied without any attempt at reduction. It is good practice to consider all injured wrists as fractured until definitely proven otherwise. This is especially true in patients over the age of forty.

Proper x-ray diagnosis should include four views: anteroposterior, posterior-anterior, lateral and oblique. Often the slight compression with resultant deformity and disabling weakness is missed in the conventional anteroposterior and lateral x-ray views. In addition to these factors, slight fractures of the carpal bones are more readily visualized. Pentothal sodium has afforded us with a safe, simple and quick method of anesthesia, and no attempt at reduction should be made without this aid because of the extreme pain associated with these injuries. I have stayed away from local infiltration of novocaine because of the possibility of introduction of infection and because of its inability to completely relax the pull of the muscles of the forearm.

In a discussion of Colles fractures we are only concerned with extension and compression fractures of the lower end of the radius, except in instances where the styloid process of the ulna may be involved. The term, Colles fracture, is too loosely used by the medical profession. The condition originally described by Colles was a transverse fracture 4 cm. above the joint line with displacement upward and backward of the lower fragment. This site is, however, rare, for these fractures for the most part occur one-half to three-quarters of an inch above the articular margin and are usually associated with some degree of comminution of the lower fragment. The transition of the dense cortex of the shaft into the cancellous lower portion is the point of least resistence and the usual site of fracture.

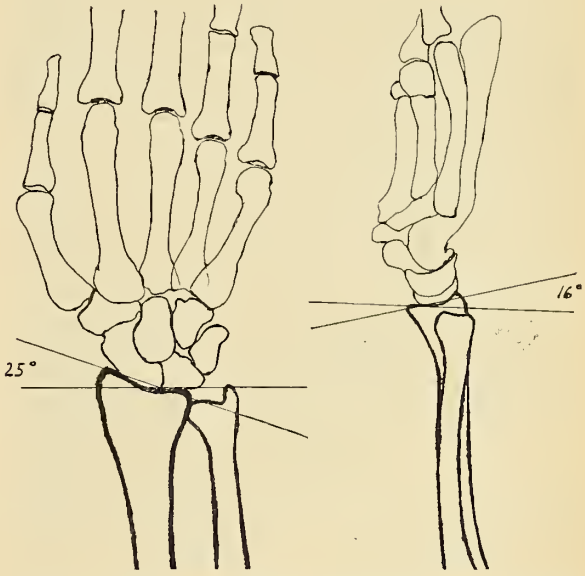


Fig. 1. Diagram taken from x-ray of normal wrist joint in the (a) posterior-anterior and (b) lateral positions, showing the articulations and angles which should be present in the well-reduced Colles fracture.

The incidence of Colles fracture is most common in early youth, in the farming industry and in the "falling down" aged. In early youth, due to the fact that the lower end of the radius develops from a single center which appears at the end of the second year and forms an epiphysis which unites with the shaft at the age of eighteen or nineteen, the epiphyseal injury or separation responds readily to simple leverage reduction. In the aged and in industrial injuries with marked fracture deformities the problem of proper reduction is not so simple.

The wrist joint has been described as consisting of three joints, the radiocarpal, the intercarpal and the carpometacarpal joints. The radiocarpal joint with which we are concerned in this discussion

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is the articulation between the scaphoid and semilunar bones and the lower articulating surface of the radius. The articulating surface of the radius is concave and directed downward, forward and inward. The joint cavity is convex both in its upward and lateral diameters. Knowledge of the normal joint angles as seen on x-ray are important to proper anatomical reduction. I wish to repeat that in the normal anteroposterior view the articular surface of the radius is inward, forward and downward, and, with the arm held upright, forms an angle of approximately 25 degrees from a horizontal line through the joint (Fig. 1a). In the lateral view likewise the articular surface facing downward forms an angle of 16 to 20 degrees toward the flexor surface of the forearm (Fig. 1b). Good reduction must nearly as possible conform to these angles. Grossly, then, the reduced fracture will show the hand at mid-position in an ulnar deviation of about 25 degrees.

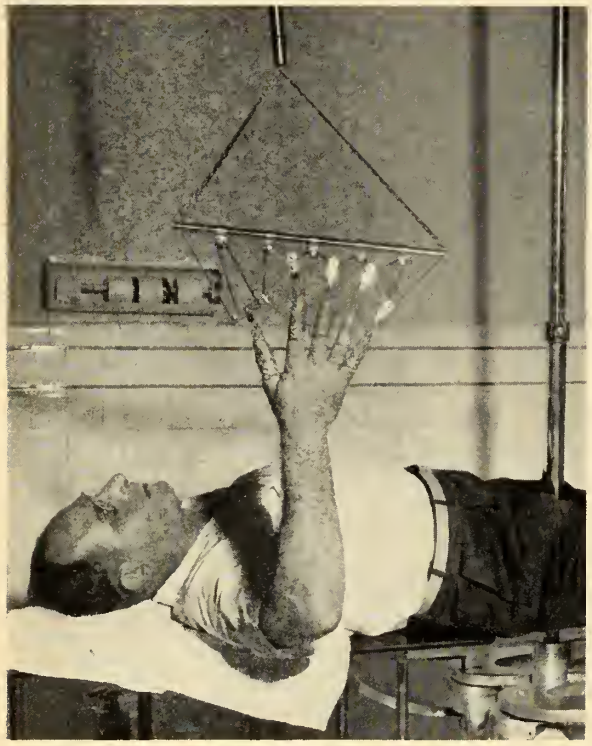


Fig. 2. Application of the suspended finger trap with the arm and forearm "hanging out" and the patient under complete anesthesia. The hand is in mid-position with correct ulnar deviation. Fluoroscopic examination is easily facilitated, and casting or other fixation is completed before releasing the finger traps.

For the purpose of treatment, Colles fractures should be classified as:

1. Incomplete fractures of the lower end of the radius.
2. Complete fractures of the lower end of the radius.
3. Fracture of the posterior articular margin.
4. Oblique fractures of the styloid process of the radius.
5. Complete fractures of the lower end of the radius with displacement.

The first four groups are amendable to simple treatment by fixation with the various splints and casts with the hand and forearm in the mid-position. The fifth group comprises the great majority of all treated wrist fractures and practically always involves some degree of impaction or entanglement of fragments which, if not reduced, results in permanent deformities. This type as well has the marked early swelling due to severe trauma of the soft parts which lends an additional problem in diagnosis and reduction. Early replacement of the lower end of radius in its approximately normal position is necessary if one is to expect a functional wrist. I wish to emphasize the need for early reduction which tends to minimize the eventual swelling.

There are two methods of reduction: reduction by leverage and reduction by traction and molding. Leverage in the hands of the skilled operator is very successful, but likewise in the hands of the ordinary operator has been in a great part the cause of insufficient and poor reduction. Undoubtedly this is due to the inability to break up impactions and fragment entanglements.

With the usual traction method a pad is placed over the flexor surface of the upper arm proximal to the elbow and a band or strap fixed to the floor or operating table or held by an assistant for counter-traction. The operator grasps the hand, exerting traction and combined hyperextension to break up the impaction. Molding is accomplished with the palm of the other hand of the operator. Considerable assistance is needed to maintain a reduction until fixation is accomplished, usually by direct skin casting.

For the past three years, I have employed the use of a finger trap (Fig. 2) in all instances of forearm and wrist fractures. This particular trap (Siebrandt) engages all four fingers and the thumb. The wire spring traps are attached by adjustable cords and pulleys to a metal bar, which

in turn is attached above to a 30-pound calibrated spring cylinder by a metal chain. After applying the traps, the entire apparatus is suspended through a pulley from the ceiling of the operating room or from an overhead metal bar attached to the fracture table. With the arm suspended at a 90 degree angle, and the patient in the supine position, counter-traction is applied as usual by a band across the flexor surface of the upper arm proximal to the elbow (Fig. 3). A 15-pound pull is exerted for fifteen minutes, after which the fracture site is examined by portable fluoroscope or x-ray. In most instances, the fracture will be found completely reduced. Molding or further manipulation, if necessary, is easily done without any assistance. This method employs the use of fluoroscope or x-ray to verify the reduction before permanent fixation is applied. It is surprising how little traction force is necessary to reduce moderate displacements sufficiently. In a great number of instances, by just "hanging the arm out" in the trap without any counter-traction except the weight of the arm, complete reduction will be accomplished under general anesthesia, which aids relaxation of muscular spasm.

The criteria for complete reduction are:

1. Ability to completely flex the wrist as compared with other normal wrist.
2. The radial styloid is one finger's breadth below the styloid prominence of the ulna.
3. The normal convex contour of the dorsal surface of the lower radius has been restored and the radial adduction deformity has disappeared.

In the very severe fractures with marked comminution and radial shortening, there actually is complete bone destruction. In order to arrive at a final functional wrist, continuous traction and counter-traction must be maintained until new callus and bone fragments have been consolidated to give normal bone length. Skeletal pinning and external fixation, as described by Anderson and O'Neil of Seattle, Washington, in a paper written and published in *Surgery, Gynecology and Obstetrics* in April, 1944, has given us the best answer to this too frequent crippling problem. For traction, a Kirchner wire or small Anderson pin is passed through and through the distal one-third of the second metacarpal or the center of the first metacarpal. This pin or wire is connected to a "U" bar carrying an Anderson double clamp. Counter-traction is accomplished by two half pins inserted at opposite angles into the lateral aspect of the radius above the fracture site. After

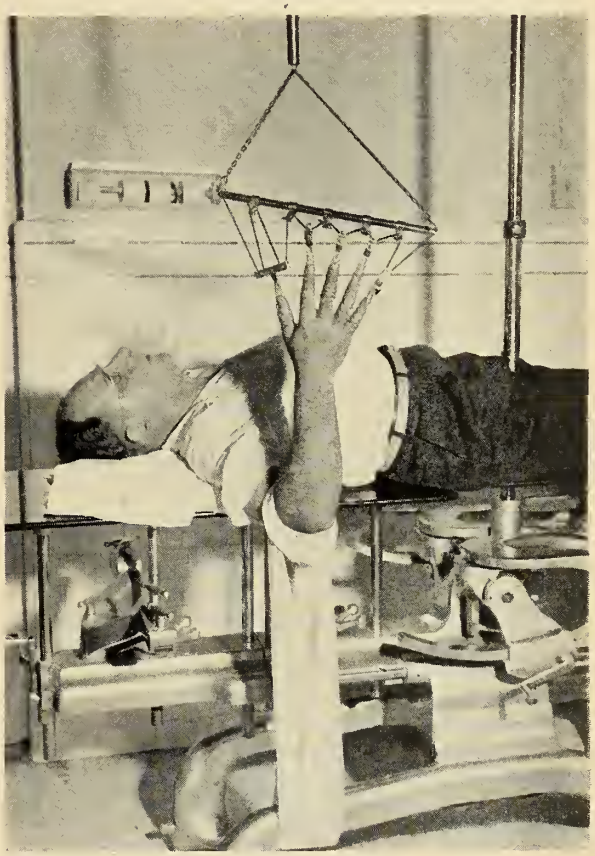


Fig. 3. Reduction of fracture impactions and comminutions with the application of 15-30 pounds of counter-traction as measured on the scale suspended from the overhead table bar.

manual reduction and radial length have been accomplished with the finger trap, two fixation rods are applied between the one half-pin unit in the upper radius and the "U" bar attachment in the second metacarpal bone. This method facilitates early function of the entire hand and even permits considerable pronation and supination of the forearm. Activity of the hand is encouraged immediately, and the use of a sling or other support is discouraged. Eight to twelve weeks are necessary in this apparatus for sufficient consolidation to be accomplished. This period of time can be determined only by x-ray. A number of my colleagues feel that skeletal pinning and external fixation should not be confined to the severe comminuted type of fracture. Too often, after adequate reduction and casting and with the

(Continued on Page 279)

OVARIAN PREGNANCY

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THIS report was inspired by a patient with an ovarian pregnancy upon whom it was our privilege to operate, and is presented to add this one case to the accumulated literature regarding this rare and interesting condition.

Ovarian pregnancy is the rarest of the primary forms of gestation, except for the cervical, which is almost unique,[1] and for the abdominal. DeLee[9] quotes Werth as considering primary abdominal pregnancy so rare that it need not be considered, but Curtis[5] states that several authentic cases of primary abdominal pregnancy have been recorded.

The possibility of ovarian pregnancy was first suggested by Mercer in 1614,[22] but it was not until 1682 that Maurice claimed the first reported case.[16] Following this, numerous cases were reported, but analysis of these disclosed them to be inconclusive for the most part. Catherine van Tussenbrock in 1899 is credited with the first complete histological description of an ovarian pregnancy, and Thompson in 1902 was the first American to demonstrate an undeniably authentic specimen.[22,24,25]

The literature following this becomes very confusing as to the actual number of genuine cases of ovarian pregnancy. Norris listed nineteen positive cases up to 1909, and Geller finds a total of forty-five cases up to December, 1941.[11] Novak, in his textbook published in 1940, wrote that there were about fifty reported cases in which the diagnosis of ovarian pregnancy is based on acceptable evidence.[18] Smiley, in October, 1944, states that only about fifty cases in the literature can fulfill rigid requirements,[19] while Stamm in June, 1946, reports eighty-five proven cases.[2] The last article to appear on the subject, by Wittenberg in April, 1948, presents a case which the author considers to be the eighty-first.[25]

The actual incidence of ovarian pregnancy would be probably much higher if all hemorrhagic lesions of the ovary were subjected to pathologic study. The incidence has been estimated at one in 25,000 pregnancies, and to be from 0.7 to 1.07 per cent of all ectopic pregnancies.[3,14]

Ovarian pregnancy has been classified into two main types, the primary and the secondary. The primary implies that the ovum is fertilized while it is still within the graafian follicle, and there implants and grows. This was considered by DeLee[9] and others to be the only type, but now a second type, the secondary or superficial, is considered, wherein the ovum is fertilized after its release from the follicle and subsequently implants itself on the surface of the ovary.

The rarity of ovarian pregnancy, inasmuch as the ovary and the ruptured follicle are so accessible to the sperm cells, has been explained by the fact that the ovum as it exits from the ovary must undergo maturation before it is capable of being fertilized. This normally occurs during its passage into and through the outer portion of the tube.[25]

It is conceivable that the ovum, after having been fertilized as usual in the fallopian tube, might travel in a retrograde manner and lodge in the still gaping follicle, there to develop and be classified as a primary ovarian pregnancy.[4,19] Or a tubal pregnancy may abort, and, if the separation of the placenta has been rapid and the chorion is in good condition, it may implant on the ovary, or elsewhere, and continue to grow.[21]

Endometriosis has been noted on several occasions to be associated with ovarian pregnancy, and it may be that ovarian implantation cannot take place in the absence of endometrial tissue on the ovary.[19] The fact that the ovary is the most frequent site of endometrial implants bears some support to this, but many cases have been described with no signs whatever of endometriosis. Decidua itself is not necessary for the implantation or continuation of a pregnancy.[14]

The implantation on the ovary is pathologic from the beginning, and is doomed to failure sooner or later. The ovary reacts with the formation of a pseudo-decidua consisting of fibrin, lutein cells, and masses of trophoblasts.[11] The early implantation and placentation do not differ greatly from intra-uterine pregnancy except for the absence of true decidua.[25]

The usual course of ovarian pregnancy is rupture of the ovary and extrusion of the products of gestation into the abdomen within the first trimester.[9,20,25] Following this, molar formation, including hydatidiform, has, on occasion, been observed.[9] But, surprisingly enough, some are car-

Read at the annual meeting of the Northern Minnesota Medical Association, Duluth, Minnesota, August 20, 1948.

ried long enough to produce a viable baby. In a survey of the literature, Nicholls finds that thirty-eight cases of ovarian pregnancy have gone to the age of viability of the fetus (seven months), from which were salvaged twelve living babies and twenty-two living mothers. He adds a case of his own where both the 10 pound 3 ounce child and the mother lived.[17] Of those reaching full term, the usual termination has been death of the fetus following an unproductive period of labor.[20]

The symptoms of ovarian pregnancy resemble very closely those of tubal ectopic pregnancy, from which it cannot be differentiated except at laparotomy. It may rupture later than the usual tubal pregnancy, and there may be less uterine bleeding. The pelvic pain may be less acute since there are slight, if any, muscle cramps.[19]

The differential diagnosis of ovarian pregnancy is the same as for the more common tubal ectopic pregnancy.

From the pathological standpoint, the criteria of diagnosis of ovarian pregnancy were formulated by Spiegelberg in 1878, and are quoted by Dale as follows:[6]

1. The tube, including the fimbriated end, must be intact and must be distinctly separate from the ovary.
2. The gestational sac must definitely occupy the normal position of the ovary.
3. The gestational sac must be connected with the uterus by the utero-ovarian ligament.
4. Unquestionable ovarian tissue must be demonstrable in the walls of the sac.

DeLee, however, states that to establish the anatomic certainty of an ovarian pregnancy, all that is necessary is to prove that "the tube, including the fimbria ovarica (excluding also gestation in an accessory tube), is absolutely free from any part in the formation of the fetal sac."

The treatment of ovarian gestation is that of any ectopic pregnancy: excision of the products of gestation as soon as the diagnosis is made, and the patient's condition permits.

Case Report

Mrs. E. D., a twenty-four-year-old white woman, was referred to us by Dr. Harry Palmer of Blackduck, Minnesota, and was admitted to the Lutheran Hospital at 12:30 a. m., January 9, 1948, with the chief complaints of severe lower abdominal pains and vaginal bleeding.

The patient stated that her last menstrual period had begun on November 17, 1947, and was a normal period of five days' duration. Her menses had previously been regular, occurring every twenty-eight days. Since her last period, she had noted some enlargement of the breasts, but had experienced no nausea.

On December 22, 1947, five weeks after her last menstrual period, she had suffered an attack of severe lower abdominal pains, crampy and intermittent in nature, that

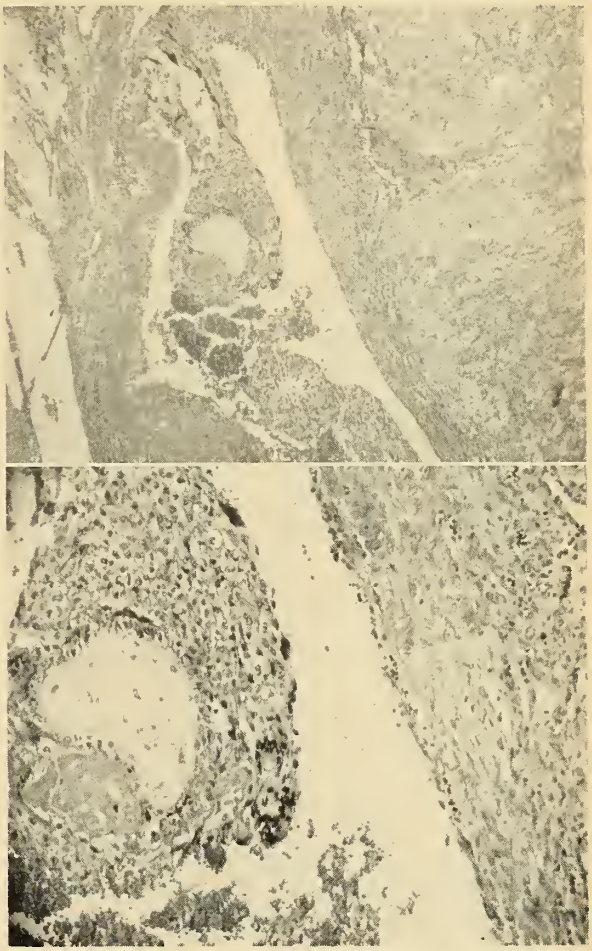


Fig. 1. *(above)* Photomicrograph of a section of the right ovary, showing corpus luteum on the right and a cross-section of placental villus just to the left of center.

Fig. 2. *(below)* Higher power view of same section, with corpus luteum on the right and placental villus, surrounded by decidua-like cells, on the left.

were described as going through to her rectum. There was no nausea, vomiting, bowel upset, or collapse. These pains lasted about two days. On December 27, 1947, she began to have moderate and irregular vaginal bleeding, which continued up to the time of the hospital admission. At 4:00 p. m. of the day before admission, she had again experienced sudden and severe pain in both lower quadrants of the abdomen, associated with weakness. She had not fainted. She was seen by her home physician and sent to the hospital with the diagnosis of a ruptured ectopic pregnancy.

The past history revealed only that she had a son four years old, with no other pregnancies, and that she had been slowly losing weight for the past three years.

The significant findings of the physical examination

were as follows: temperature 97°F.; pulse 68, regular, fair quality; respiration 18; blood pressure 92/50. She was a thin but well-developed white woman, very pale. Her skin was warm and dry. Breasts showed increased glandular tissue, with no secretion or masses. There was fullness of the lower abdomen; muscle guard in the right lower quadrant with severe rebound pain; very tender throughout the lower abdomen, more on the right, with doughy resistance to pressure. There was decreased resonance on percussion over the suprapubic area, extending into the right flank; very few peristaltic sounds were heard. Liver dullness was present; the liver, spleen and kidneys were not felt. Pelvic examination showed no active bleeding. The cervix was soft, with marked pain on any motion of the cervix. A soft fullness was felt in the cul-de-sac and on the right side; the uterus could not be outlined because of abdominal muscle guard. Pelvi-rectal examination showed a soft bulging fullness in the cul-de-sac, more on the right; no definite mass was felt.

The white blood count on admission was 22,450. The red blood count was 3,610,000 with a hemoglobin of 70 per cent. The urine showed a trace of albumin, with 8 to 10 white blood cells and 6 to 8 red cells per high power field. The diagnosis of a ruptured right tubal pregnancy was made. Donors were obtained, and the patient was given two 500 c.c. transfusions of whole citrated blood.

At ten-thirty a. m. on the day of admission, the patient was operated upon under ether anesthesia. On opening the abdomen through a suprapubic midline incision, a large amount of liquid and clotted blood was encountered and evacuated. The cul-de-sac was filled with clotted blood. The uterus was enlarged to one and one-half times the normal size and was soft, but otherwise normal. Both tubes and the left ovary were entirely normal. The right ovary was 3 cm. by 6 cm. in size, and had an undisturbed anatomical relationship with the broad ligament and the uterus. The fimbriated end of the right tube was entirely free from the ovary. A cyst 2 cm. in diameter filled with partly clotted blood was seen in the right ovary. There was placental tissue firmly adherent to, and growing from, the free border of the right ovary. Several pieces of placenta, undergoing necrosis, were found lying free in the cul-de-sac. The fetus, which should have been 15 mm. in length, was not found. The appendix, cecum and pelvic colon were normal. No endometrial implants were seen. After the pathological condition was identified, the right ovary was delivered, the mesovarium and the ovarian ligament clamped across, and the ovary removed. Two suture ligatures were used to close the mesovarium. The fluid and clotted blood and the loose placental fragments were removed from the cul-de-sac and the abdomen was closed in layers with silk. The appendix was not removed. Five hundred c.c. of whole citrated blood was given during the operation. The postoperative course was uneventful. The red cell count was 4,610,000 the afternoon of the operation, with a hemoglobin of 93 per cent.

The patient was allowed to walk the day following operation, and was discharged from the hospital on the third postoperative day, to be ambulatory at home. She returned to the office for the removal of skin sutures on the seventh postoperative day, at which time the wound was well healed. The patient has since become pregnant again.

Pathological study of the specimen was performed by Dr. Kano Ikeda of Saint Paul, Minnesota, whose report is as follows:

"Gross: The specimen consists of an ovary, slightly enlarged. It contains a large corpus luteum, about 2 by 1 by 1 cm. Alongside of it is a hemorrhagic area about 2 by 2 by 1.5 cm. which apparently has ruptured into the abdominal cavity, from which are obtained several clots of blood.

"Microscopic: The ovary is diffusely edematous and shows several cystic follicles. There is a large, well-developed corpus luteum with hemorrhagic center. Alongside of the corpus luteum, and tightly adherent to it, is placental tissue showing signs of hemorrhage, infiltration of chorionic cells in the wall, and numerous well-developed chorionic villi.

"Diagnosis: Ovarian ectopic pregnancy."

Summary

A case, proven by operation, is presented which satisfies Spiegelberg's four criteria for a true ovarian pregnancy.

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GLOMUS TUMORS

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GLOMUS tumors produce severer and more disabling pain than any tumor known to the oncologist. When fully grown these tumors are, however, the smallest (Fig. 1) of any of the tumors usually presented for treatment; that is, at the time a glomus tumor is removed it is smaller than any other tumor that the surgeon encounters. This tumor apparently occurs infrequently, yet once the condition is known and understood and the method used to make a diognosis is appreciated, many more of these tumors than are anticipated may come to light and consequently many more patients than heretofore will be relieved of distressing pain which often has been attributed to a functional disturbance.

In 1935 I[3] reported the first case of glomus tumor that I had seen and called the attention of the members of the clinic staff to this unusual and very interesting neoplasm. Since that time I have seen, diagnosed and surgically removed fourteen glomus tumors. Other surgeons at the Mayo Clinic also have removed glomus tumors and in our experience the results have been most gratifying.

The patient who has a glomus tumor frequently is middle-aged or older. The chief complaint is severe pain which usually centers around a small area on one of the extremities. The pain may be localized sharply or, what is more frequently true, the pain may extend up or down the extremity from the site of the lesion. Often the lesion seems entirely too small to produce the amount of pain of which the patient complains and obviously suffers. When an attempt is made to palpate the lesion, the patient will withdraw the extremity for fear that excruciating pain will be produced.

The normal glomus from which these tumors arise is located most commonly in the subungual region and a frequent site for a glomus tumor is underneath a fingernail. Nevertheless the tumor may be deeply situated. In the case of a patient who was seen recently (Case 2) the tumor was situated along the periosteum which covered the posterior aspect of the femur. The true subcutaneous glomus tumor also may not be visible, but if the region of the tumor is stroked or touched the patient will exclaim, due to the severe pain which is caused.

The first point in the diagnosis of this lesion is to suspect it. When a patient complains of an excruciating, lightning-like pain for which there is

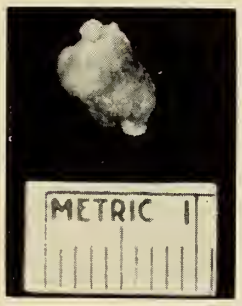


Fig. 1. A subungual glomus tumor. This tumor was larger than most glomus tumors of the subungual variety.

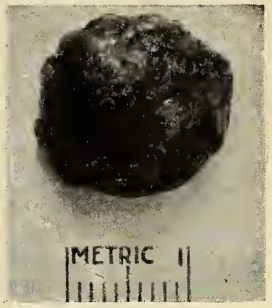


Fig. 2. Extremely large glomus tumor which was situated deep in the popliteal fossa (Case 2).

no obvious cause, a careful search should be made for a glomus tumor. The one special test which I have found to be of most value in the location and subsequent diagnosis of the lesion is the one which I have called the "pin test."[4] This test is employed as follows.

An ordinary steel pin is used. The patient is asked to indicate the point of maximal pain or tenderness. Often, as the physician passes his finger toward the spot of maximal pain, the patient will withdraw the extremity, just as the patient with trigeminal neuralgia will withdraw his face when the trigger zones[2] are approached. However, when the patient's confidence is gained, the point of a steel pin can be pressed into the skin as near as 1 cm. to the lesion without producing severe pain. As soon as the point is pressed over the lesion, the patient will have an attack of excruciating pain. On many occasions when I could not see the lesion, I have been able to identify its location and make the diagnosis with the help of the pin.

Tumors which might be confused with glomus tumors are the neurofibromas, angiomas and melanoepitheliomas. A plantar neuroma,[1] which today is recognized as the cause of so-called metatarsalgia, is another tumor which might also be

From the Section on Neurologic Surgery, Mayo Clinic, Rochester, Minnesota.
Read at the meeting of the Southern Minnesota Medical Society in Winona, Minnesota, September 13, 1948.

confused with the glomus tumor. As a rule, neurofibromas are much larger than glomus tumors before they produce symptoms comparable to those of glomus tumors. An angioma, on palpation, would not produce the pain which is so characteristic of the glomus tumor although it may look entirely like a glomus tumor. A melanoepithelioma might resemble a glomus tumor superficially but again it does not produce the pain which is characteristic of a glomus tumor.

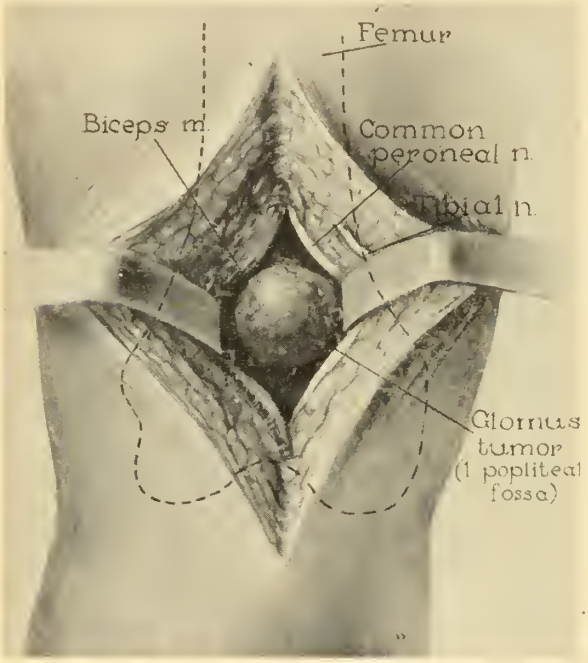


Fig. 3. Relationship of the tumor to popliteal fossa (Case 2).

The treatment of the glomus tumor is excision. Roentgen therapy and radium therapy have not proved of value. The lesion should be recognized as being benign, and unnecessary amputation of a finger or an extremity should not be carried out. The excised tumor should be submitted to a competent pathologist who is acquainted with glomus tumors; he will identify the microscopic characteristics by which the tumor may be recognized.

Since these tumors are unusually small and consist of blood vessels as well as muscle and nerve fibers, the lesion may be difficult to find at the time of exploration. I prefer not to put the patient to sleep until the site of the lesion is identified or very closely approximated or until the tumor is exposed surgically. My practice is to identify the site of the lesion with a wheal needle on a Lundy syringe containing 0.5 per cent procaine hydrochloride. After the site of the lesion is identified, field block is carried out proximally in order to block off the area of the tumor so that the tumor may be exposed while the patient is awake. As the tumor is approached the severe pain becomes greatly exaggerated. It is important not to inject any solution into or immediately adjacent to the tumor, for to do so may result in blanching the tumor and consequently it will be difficult to distinguish it from the adjacent tissues.

As a matter of fact, it often has been necessary for me to have the patient undergo general anesthesia as the tumor itself is approached. Particularly is this true if the tumor is deeply situated, as for instance, in the calf or the thigh. The subungual variety of lesion and that which is located superficially in the skin and could not be easily lost, can be removed completely with local infiltration; general anesthesia in such cases is not necessary. The following reports of cases are illustrative of glomus tumor, the difficulties which may be encountered in its diagnosis and the gratifying result which may be obtained when the tumor is recognized and successfully removed.

Report of Cases

Case 1.—A woman, fifty-one years of age, had noted a small red spot beneath the nail of the third finger of the right hand for sixteen years. On the slightest touch she experienced pain. Gradually the pain became paroxysmal and continued to increase in frequency and intensity. The pain extended from the finger to the hand, forearm, and shoulder. During the two years previous to her registration at the clinic she had had severe pain in the right upper extremity without any stimulus, such as touching the finger. The "tumor" as she described it had become larger and the nail had become slightly raised. The pain had become unbearable and she was anxious to obtain relief. Examination of the finger disclosed a slightly elevated fingernail and a small tumor beneath. The findings were typical of a glomus tumor; diagnosis was made and surgical removal of the tumor was advised and accepted. Local anesthesia was used. The distal three-fourths of the nail and nail bed were removed and a small tumor was exposed. The tumor, although it was compressed, had elevated the nail and it rested on the dorsal aspect of the ungual phalanx of the ring finger of the right hand. The entire tumor was removed along with some of the tissue about it. Then the portion of the ungual phalanx which had been depressed by the tumor was curetted and a vaseline gauze dressing was applied. The tumor measured only 1 mm. in diameter and the findings, on microscopic examination, were typical of a glomus tumor; namely, vascular elements, muscular elements and nonmedullated nerve fibers.

Case 2.—The largest glomus tumor which I have re-

moved had afflicted a woman twenty-six years of age. This woman's chief complaint was weakness and pain in the left leg of thirteen years' duration. Exercise caused increased pain and she could not run or dance. At the age of twenty years the pain began to involve most of her left leg. It finally became so severe that it was difficult for her to get around. At the time this patient came to the clinic she had pain constantly. She said the pain was aggravated by cold damp weather. Heat did not give complete relief. During the four years previous to the patient's registration the left leg had felt weaker and it became increasingly difficult for her to walk. When she did walk, she had a distinct limp on the left side.

Examination revealed exquisite tenderness in the left popliteal fossa and detailed palpation was impossible. The circumference of the left leg was 1.5 inches (3.81 cm.) smaller than the right and that of the left thigh was 2 inches (5.08 cm.) smaller than the right. Results of a neurologic examination were entirely negative. There was no evidence of vascular disease; that is, all arterial pulsations were normal. There was no evidence of arterial insufficiency. She did have some secondary vasomotor spasm which, in the opinion of the consultant, probably contributed to the coldness of the leg, but not to the pain. A tentative diagnosis of glomus tumor in the popliteal fossa was made and exploration of the tender area was advised and carried out. Under local infiltration with 0.5 per cent benzoyl-γ-(2-methylpiperidino)-propyl hydrochloride (metycaine) at the site of maximal tenderness, the exploration was started. When the common peroneal nerve was exposed the patient had considerable pain but when the nerve was retracted, the maximal tenderness was found to be much deeper. The pain was so great that it was necessary to anesthetize the patient with pentothal sodium given intravenously. The dissection was then carried down to the level of the lower end of the femur just above the knee joint and a bluish tumor mass was encountered in the loose areolar tissue adjacent, but not attached, to the joint and not attached to the periosteum of the femur. The tumor was typical of a glomus tumor, in every way except for its extreme size (Fig. 2). After adequate exposure of the mass, it was freed and removed in its entirety. The wound was closed in layers without drainage. Figure 3 shows the relationship of the tumor to the surrounding structures. When the patient awoke from the anesthesia she was free of pain and has remained free since.

Summary and Conclusions

Glomus tumors are small, benign neoplasms which arise from the normal structures found in the body, namely, cutaneous neuromyoarterial glomera. The tumors are usually subcutaneous and characteristically subungual in location. However, they may be deeply situated as in the case reported in which the tumor rested on the lower end of the shaft of the femur. Severe pain is the chief complaint. When the tumor is suspected a diagnosis can usually be made. The treatment is complete excision of the tumor. The removal of such a tumor usually results in cure. At the Mayo Clinic we have not had any experience with recurrence, although recurrences have been reported in the literature. The tumor is benign and amputation of a digit or extremity probably is not justifiable.

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BENIGN STRICTURES OF THE BILIARY PASSAGES

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Case Report

WATERHOUSE-FRIDERICHSEN SYNDROME

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THIS is a case report of an eight-month-old male infant that was referred by Dr. Snyker of Ely, Minnesota.

The infant was admitted to the Virginia Municipal Hospital on June 11, 1948, at 6:45 p.m., and expired about forty minutes later. The complaints, as given by the mother, were as follows: About five hours previous to admission, the infant became suddenly ill with a fever of 105.6°, followed shortly by a bluish discoloration of the lips and nails. Soon after, the infant developed pin point reddish areas, followed by enlarged spots of reddish color all over the body. About 5:00 p.m., the infant became stuporous. He was seen by the private physician, who advised hospitalization in Virginia. The mother stated that the youngster had had whooping cough six weeks previously, but for the past two weeks there had been no cough and no signs of any disease. On the morning of admission, the youngster awoke perfectly well, ate a usual breakfast and noon meal, and appeared to be in good health until the sudden onset of high fever at about 2:00 p.m. The family history was irrevalent. There were two siblings, living and well; both had had chicken pox and pertussis the past spring. The father and mother were living and well.

Examination.—The baby was well developed and well nourished. He was in a state of stupor and appeared moribund; the lips and nails were cyanotic; the skin was mottled, and the child was covered from head to foot with purpuric spots, varying in size from 1 mm. to 2 cm. The pupils were dilated and fixed, and did not react to light. The optic nerve was hemorrhagic on opthalmoscopic examination. The fontenel was soft. There was no nuchal rigidity. The arms and legs were flaccid. The Babinski reflexes were positive. The head and upper part of the body were very hot; the legs and lower abdomen were very cold. The abdomen was rigid. There were no evident jerking movements of the body or extremities. The ears, nose, and throat were negative. The baby was typed for transfusion, given coramine, vitamin K, and oxygen; and while the transfusion was about to be started, the infant expired. An attempt by the laboratory technician to get sufficient blood for blood study was unsuccessful. However, sufficient blood was obtained for a blood smear. The smear revealed 99 per cent polymorphonuclear cells and 1 per cent lymphocytes.

The autopsy findings, as reported by Dr. George Berdez, pathologist, were as follows: A well-nourished male infant measuring 28.5 inches and weighing about 22 pounds. Numerous erythematous patches and hemorrhages of the skin measuring up to 2 cm. in diameter. These changes were most marked on the chest and abdomen. The arms, legs, face, and mucous membranes also displayed hemorrhagic areas. On opening the abdominal cavity, the abdominal viscera was found to be within normal limits. The adrenals were very large, about three times the size of normal. On cut surface both adrenals showed a large hemorrhage in the medullary substance, and the cortical layers were also infiltrated with diffuse hemorrhages. The kidneys were normal. The patches of Peyer of the small intestine and the solitary follicles of the large intestine were prominent. The left lung showed small hemorrhages of the visceral pleura; the tissue, congested and infiltrated with hemorrhages, showed areas of beginning bronchopneumonia. The right lung showed a similar condition.

Diagnosis.—(1) Massive bilateral adrenal hemorrhage—consistent with the Waterhouse-Friderichsen syndrome. (2) Beginning bronchopneumonia. (3) Erythematous hemorrhagic eruption of the skin.

I believe this case fits into the entity known as the Waterhouse-Friderichsen syndrome, and would like to briefly summarize this condition.

Discussion

The Waterhouse-Friderichsen syndrome is a clinical pathological entity that is receiving more widespread recognition in diagnostic circles. Although much discussion has arisen as to the proper application of this term, present opinion would reserve its use for those cases in which there is a fairly constant group of clinical signs and symptoms typical of a fulminating septicemia: sudden onset, hyperpyrexia, purpura, cyanosis and shock, associated with a definite pathological picture embodying adrenal hemorrhage.

History.—The earliest report[4] of this condition appeared in 1894 when Valcker described fulminating purpura with bilateral adrenal hemorrhage. In 1911 Waterhouse[8] presented a similar series of cases with which he associated a distinct clinical picture. Friderichsen[1] in 1918 summarized the literature, but it was not until 1933 that the designation of Waterhouse-Friderichsen was attached to the disease by Glanzmann[2]. In a recent summary of 125 cases,[3] twenty-nine had been reported since 1941.

Etiology.—Various organisms were postulated as the etiological agent. However, careful bacteriologic studies in more recent times have shown the condition to be almost exclusively the result of fulminating menginococcemia. Thus, Thomas[6] reported a series of twenty-six patients dying as a result of menginococcemia before typical meningitis symptoms occurred. Of twenty-three autopsies in this series, seventeen had bilateral adrenal hemorrhage. No restricting age incidence was reported, although the majority of cases occur in children, ninety per cent in those nine years and under.

Symptoms and Course.—The patient is typically described as being in perfect health until the onset. In classical cases, the child awakens from sleep with a cry. He may be seen within two or three hours by a physician, during which time the hyperpyrexia, marked malaise, headache, vomiting, and abdominal pain usually

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is present. The first characteristic feature which usually prompts hospitalization is the accompanying cyanosis of the lips and nails; closely following this the purpura manifestations occur. These show themselves as hemorrhagic areas, usually beginning on the limbs, trunk, and mucous membranes as tiny isolated points which rapidly enlarge and coalesce. The petechiae have dark red or purple centers which do not fade on pressure. They develop very rapidly, literally under the observing eye. Hyperpyrexia is universally present. Various investigators report a notable fall in blood pressure readings. This is a direct indication of the tremendous circulatory collapse accompanying the toxemia. The typical picture is that of a fast, weak, irregular pulse; shallow respirations; pallor; slowing of the heart rate, and a terminal fall in blood pressure and temperature, followed by death in four or five hours after the onset. Associated features occurring as part of the picture of shock are Cheyne-Stokes respirations, urinary incontinence, coma, and delirium. Fleeting signs of pulmonary involvement are often seen. Occasionally neurological signs such as muscle flaccidity, tremor, chills, convulsions, and rigidity of abdominal muscles are observed.

Until recently very few reports of recovery have been brought forth. Several instances of recovery from what apparently appeared to be a fulminating meningococcemia have been reported, but whether the adrenals were involved cannot be ascertained. Most of the cases are fatal. It has been suggested that those individuals who have recovered from fulminating meningococcemia be followed for the possible development of Addison's disease.[7]

Treatment.—1. Combatting bacteremia: sodium sulfadiazine intravenously and subcutaneously, maintaining a blood level of 15 mg.[7] Penicillin is of questionable value but should be tried.

2. Overcoming circulatory collapse: adrenal cortical extract and adrenalin. Transfusion and vitamin K.

3. Supportive measures: (1) fluids and plasma; (2) respiratory stimulants, coramine, and oxygen; (3) sedation for delirium; (4) nasal suction for abdominal distension, if present; (5) saline enemas. The treatment, to be effective, must be started early.

Laboratory Findings.—Recovery of organisms from (1) spinal fluid, (2) blood culture, (3) petechial hemorrhagic areas. Spinal fluid and blood findings are inconsistent. Bleeding time and clotting time are normal.

Pathological Features.—1. Predominant pathological feature is that of hemorrhage into the adrenal gland. Bilateral hemorrhage occurs in 95 per cent of the cases.[8] At autopsy, the adrenals are enlarged, dark red and bluish purple in color, and contain massive intercapillary hemorrhage.

2. Extensive purpuric eruption is found on the face, extremities, and buttocks.

3. A fairly constant finding is generalized hypertrophy of the lymphatic tissue. Signs of meningeal irritation are notably absent.

Summary

1. An increasing number of cases of the Waterhouse-Friderichsen syndrome have been reported in recent years, probably due both to its more accurate recognition and to the increased incidence of meningococcic infections during the past few years.

2. The condition is believed to be the result of fulminating meningococcemia and shock, and the pathologic findings can be explained by the toxic results of the organism.

3. Present usage of the term, Waterhouse-Friderichsen syndrome, should be confined to those cases exhibiting the fairly typical clinical course as described, and undoubtedly to those patients whose symptoms are confirmed by autopsy.

4. The present outline of treatment centers on control of the bacteremia, on measures aimed to combat shock and secondary symptoms, and on supportive treatment.

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COLLES FRACTURES AND THEIR TREATMENT IN GENERAL PRACTICE

(Continued from Page 271)

recession of edema and swelling, "slipping" occurs within the first two weeks and, if not recognized by x-ray, ultimate deformities result. With pinning and fixation checked by x-ray, this occurrence is impossible, and an earlier functional wrist and hand is obtained. The technique of pinning is easily acquired and should readily be accomplished by the good general practitioner.

In conclusion, the use of a finger trap has greatly aided me in arriving at uniformly good reductions in all Colles fractures, and skeletal pinning and external fixation have aided in the moderately severe displacements and have given me a method for continuous traction and counter-traction in the severe comminuted fractures which have always produced permanent crippling. Frequent x-ray examination will verify this reduction especially during the first two weeks.

History of Medicine In Minnesota

NOTES ON MEDICINE IN FREEBORN COUNTY, 1857—1900

ANDREW GULLIXSON, M.D.
Albert Lea, Minnesota

(Continued from February issue.)

Dr. William S. Wood was born at Hornicorn, Wisconsin, August 1, 1873. His father, William C. Wood, was born at Frost Village, Province of Quebec, Canada; and his mother, Fanny (Seelye) Wood, was born at Queensburry, New York, June 29, 1847. Both his parents died at Faribault, Minnesota, in 1921. Two surviving members of the family are a sister, Mrs. Florence S. Gardner, who now resides at Faribault, and a brother, Dr. Harry C. Wood, a long-time member of the Mayo Clinic staff, Rochester, Minnesota.

Dr. William S., before entering college, was a student at Shattuck School in Faribault. He graduated from the McGill University Medical School in 1896, and was a member of the Zeta Xi Fraternity. He practiced his profession at Geneva, Freeborn County, for a few years, paying particular attention to eye, ear, nose, and throat. From Geneva he moved to Blooming Prairie, Minnesota, and practiced there until he went abroad for further study. He spent two years, 1905-1906, in Europe touring the continent but especially studying in Vienna, where he specialized in eye, ear, nose, and throat. Upon his return he practiced his specialty at Albert Lea, Owatonna, Faribault, and surrounding towns. He had not located permanently when he was stricken with tuberculosis and went to Arizona. He returned to Faribault and died there March 16, 1910. Dr. Wood was a member of the Episcopal church. He never married.

Dr. H. G. Lowithean, a graduate of Hamline Medical College, 1894, located at Glenville in January, 1895. He married Miss Jennie E. Lewis of Glenville in 1895. In June, 1896, he sold his drug store and located at Fairmont. In 1900, according to the records of the State Board of Medical Examiners, he was located at Dennison, in Goodhue County.

Dr. Gilbert G. Belsheim was born on a farm near Forest City, Iowa, August 31, 1871. His father, Guldbrand G., and mother, Guro (Sather) Belsheim, immigrated to America from Norway in pioneer days. He was raised on a farm, attended rural schools and later the Forest City, Iowa, High School. While at Forest City he was domiciled in the home of Dr. Harry Irish, a man of noble character and a splendid physician and gentleman, and became interested in medicine. He attended the University of Iowa Medical School and graduated there in March, 1895.

After graduation, he practiced a few months at Kensett, Iowa. In 1896 he located at Albert Lea and practiced there until 1900, part of this time serving as health officer. In 1900 he moved to Northwood, Iowa, where he practiced until 1903. In the fall of that year he entered Luther Theological Seminary, Saint Paul, as a student of theology and was ordained into the ministry in 1906.

Three brothers, Ole G., a clergyman; Gullik, an attorney; Andrew G., a doctor;

and two sisters, Anna and Dena, comprised the family. Dr. Belsheim was twice married. His first wife, Emma Caroline Isaacson of Thompson, Iowa, bore him one son, George N., now a teacher of music in Minneapolis public schools. His second wife, Grace Christensen, bore him two children: Margaret and Harold, the latter a theological graduate who served as chaplain in the U. S. Army European Sector, during World War II. Dr. Belsheim died at Fort Dodge, Iowa, in May 1930, aged fifty-eight.

Dr. Gustav W. T. Barck was born at Barkaynd, Sweden, May 10, 1832. His genealogy dates back to one Hans Barck, a German baron who emigrated to Sweden in 1670 and settled at Stromstad, where he became a merchant. His father, Rev. Gustaf O. Barck, son of Regimental Commissary Hans Lorentz Barck, was born at Lille Holma, February 5, 1804. He was ordained at Wesjo, March 10, 1837, "after foreign examinations had indicated him to have a well-grounded insight." He served pastorates, founded his own private schools, and was famous as a teacher of Latin. In a résumé of his activities dated July 19, 1872, he speaks of his own private school "honored by the confidence of parents of many different communities." He cites the example of one "Robert Henning Edward Hedenstierna, enrolled by me at age seven years, who could, at ten years of age, let the incumbent Bishop, Esias Tegner, Dean C. L. Henlin, and Professor J. L. Wickelgren, on one and the same day, hear one of his age speak Latin with unusual ease." His father married Ulricka Fredricka Lundquist on March 6, 1832. In the résumé dated July 19, 1872, he speaks of his children as follows:

"None living in Sweden. Of the sons, Gustaf Wilhelm Theophil and Axel Edwin Theodore, will here only say that they, more than twenty years ago, journeyed to the United States of North America, after being duly accredited and provided with passports, the former a doctor and owning his own pharmacy, and the latter a teacher of song and music, who also conducts a considerable business in music and musical instruments. So far as is known they honor the Swedish name, have a good livelihood, and enjoy respect. They appear for the present not to wish to re-visit Sweden. *Habiant sibi!*"

From the above information it may be assumed that Dr. Barck had a well-rounded preliminary education in his father's private school and that he, too, at the age of seven years was reading Latin.

The following is quoted from direct information presented by his son, H. A. Barck, of Albert Lea:

"Dr. Gustaf W. Barck, son of a minister, and rector of the parishes of Qvenneberga and Hjoresberga, being the eldest, was supposed, according to custom, to follow in his father's vocation, a minister of the Gospel. But he seemed to have an unconquerable desire to study medicine. This was so apparent that evidently his father gave up all his fond hopes in this matter. Then his mother came to his rescue and plans were made and perfected for sending him to Heidelberg, Germany, for his education in medicine. I remember father's telling us about his stay at Heidelberg. He said the first year was mostly a round of singing, drinking, and dueling, but after that it was downright work and study.

"After his degree in medicine was conferred, he immediately directed his course to that 'land of lands,' America. He arrived in New York City with only three dollars in his pocket but was most fortunate in obtaining a position in a hospital to tide him over, for a time, with food and shelter included. Throughout his stay in New York he continued to yearn to see America. After accumulating sufficient funds he proceeded west as far as Denver, Colorado. There he joined a group of gold prospectors who were bound for South America. He mentioned one experience in which, snowbound in the southern Rockies, with food unobtainable, they resorted to digging out hibernating rattle snakes, which when properly prepared were found to be palatable and adequate for such an occasion.

"Finally, the trip reached a point near the border of South America, from which they

began their return. As they journeyed north, rumors of war between the states was heard; and on entering, they found it already in progress. It soon dawned on my father that the group he was traveling with was all on the side of the Confederate Army. This did not appeal to him, and when they arrived at a Confederate enlistment barracks, he decided to seek the Union Army, in which he enlisted as a surgeon and served in that capacity. After his discharge from service he practiced for a time at Galesburg, Illinois, and from there came to Freeborn County, locating at Freeborn and later at Albert Lea. He married Miss Amelia A. Dunn of Freeborn on May 15, 1867. Seven children were born to them, of whom two now survive: a daughter, Mrs. Florence Crowley, Glendale, California; and a son, Horace A. Barck of Albert Lea. Dr. Barck died at Albert Lea, March 27, 1913. His wife died at Freeborn, May 6, 1894."

From a letter written to his fiancee, dated Aug. 1, 1862, the following is quoted:

"You are probably somewhat astounded to hear of me in Virginia; but such is nevertheless the case. I am here serving my (our) country in capacity of surgeon in Capt. Phillips' Battery E., Reg. Light Artillery, Ill. Volunteers. Our present camp is one-half mile west of Martinsburg. I write these lines under a large oak tree, and in every direction I see the footprints of war. We are only five miles from the enemy's pickets. A few days ago, a charming lady, a secessionist, spat on an officer of the Twelfth Illinois Cavalry. The provost marshall ordered two men with an American flag to take the lady to headquarters. They did so, and when there she was asked to beg the officer's pardon. She refused and the Colonel then ordered her to be wrapped up in the flag and sent to jail. You should have heard her scream then, 'Take that accursed thing off me! that flag of pirates, of d—m Yankees,' and such. It quite maddened me to hear the thing talk, and I never felt more like dispatching a mortal to the care of 'Charon' than then."

It is difficult to correlate the activities of Dr. Barck. Exact year of emigration to America, how long he practiced in New York, when and how long his ventures were into the West and to South America, how long he practiced in Galesburg, Illinois, and the exact date of location at Freeborn are not known. From his letter to his fiancee, August, 1862, it seems evident that he was at Freeborn sometime prior to that date. We do know that he was a well-educated, well-qualified physician and surgeon, a gallant gentleman, gracious and willing in his service to his pioneer friends and patients, and that he died at age eighty-one with the honor and profound respect of a thankful community.

HISTORY OF MEDICINE IN LE SUEUR COUNTY

Under "Minnesota" the *Encyclopedia Britannica* makes the following statement: "A little north of the center, the state is traversed from North-West to South-East by the extensive forest known as the 'Big Woods'." At the time when the first doctors came into the territory, five-sixths of Le Sueur County lay in this Big Woods area, leaving only the Le Sueur and Ottawa prairies clear. In contrast to Le Sueur County, the County of Nicollet, across the Minnesota river, was primarily prairie land with few obstacles between the doctor and his patient.

Conditions were far from easy for pioneer doctors in Le Sueur County. There an early practitioner was often forced to set out on horseback with a load of bulky medicines in his saddle bags and wend his way slowly—never more than two or three miles an hour—along narrow trails through nearly solid woods. After several hours he would eventually arrive at some distant, one-room log house, warmed by a fireplace and lighted by a wick wound around a stick projecting from a holder

Most of the material in this report is provided by a writer who wishes to remain anonymous. Additional notes have been furnished by Dr. H. B. Aitkens of Le Center, Minnesota.

containing grease. These conditions prevailed until, in the process of time, roads were built and wheeled vehicles could be used. But even then the mode of travl was determined by the conditions to be found on the most difficult part of each particular journey.

Medical service to the early inhabitants of the Minnesota valley and surrounding territory was conditioned by three factors: first, the terrain and the climate; second, the settlers themselves, their impermanency and financial condition; and, third, the stage of development medicine had reached. Of these, the latter was the most important.

In 1850 medical science was an infant in the cradle. There was a small body of scientific fact which was presented in lectures to medical students, but there were no such diagnostic procedures as blood counts or test meals, and the chemical analysis of urine had barely started. The clinical thermometer was not in use, although it had been invented; and the stethoscope was still new and crude. A microscope had not yet been brought to this country from England, and when it did make its appearance, there was normally about one for every 100 medical students.

When an advance was made in medicine it was likely to remain local for some time, in contrast to the present day when the news of medical discoveries is flashed around the world almost immediately. When Semmelweiss in 1847 made his notable advance in midwifery, his discovery hardly spread outside of the hospitals in Hungary where he practiced. It was not until after 1883 that Lister first heard of Semmelweiss. Lister's own great contribution, his work on antisepsis, began in 1864; his first publication on it was made in 1867. Scotland, his native country, was slow to take up Listerism and was preceded in its adoption by Germany, which held great festivals in Lister's honor in Munich and Leipsig in 1875 and by France. In America, a rising young surgeon, W. W. Mayo, was first to adopt Lister's method of antisepsis in 1883.

"Fever", "liver complaint", "lung disease", "inflammation", "kidney trouble"—those were common diagnoses. Anatomy at this time was indeed objectively being taught by dissection of the body, but without investigation into the cause of death. Any bedside instruction was postgraduate, from a preceptor. Chloroform was a few years old, fortunately. The knife was not yet widely used as a therapeutic instrument. Face to face with an illness, the doctor had to proceed empirically to do his best, using means that had seemed to be of benefit in what appeared to be a similar case. An old-timer said of an early doctor that "he was a good nurse"; and perhaps, unwittingly, that was a compliment. Doctors were not, as a matter of fact, highly esteemed; they were, in many cases, called only as a last resort—partly, perhaps, on account of expense.

The absence of legal requirements and the remoteness from medical education facilities combined to work additional disadvantages to the early practitioners and the pioneer residents. It was not until 1883 that adequate legislation regulating the practice of medicine was passed by the state legislature. A previous attempt in 1869 to write a law protecting the people of Minnesota from charlatans and quacks was a failure and was repealed. Vital medical training was virtually unattainable; at least it was not to be had without the expenditure of great sums of money for expensive medical courses in the East.

Since there were no railroads, the population centers in the Minnesota Valley were on one side or the other of the river, which served as the main thoroughfare. In 1860, the total number of persons living in Le Sueur county was a little more than 5,000, and at that time, just as for the next fifteen years or so, the tendency for the inhabitants to settle along the river made it possible for physicians to reach a large part of their scattered patients by crossing in the ferry or in a canoe.

Physicians in one county often attended patients in the other county, that is, when the condition of the river permitted. At times when the river was impassable, as it was at certain seasons, medical needs in Nicollet were looked after entirely by St. Peter physicians and Le Sueur County by Le Sueur physicians.

Obstacles such as storms and blizzards, deep snow and impassable trails could be overcome by determined men. The big blizzard of 1873, credited with taking at least forty lives in Minnesota and Dakota and causing hundreds of cases of frozen limbs, as recalled by Dr. Asa W. Daniels, pioneer practitioner in Nicollet County who died in 1923, provides a typical picture of what a blizzard could mean to an early doctor. According to Dr. Daniels, the morning of the blizzard was warm; the snow was melting and there was a heavy fog. In the forenoon, he had visited Cleveland, Le Sueur County, and at two in the afternoon he proceeded to New Sweden, fifteen miles away. Arriving at his destination, the farm home of a Mr. Peterson, Dr. Daniels merely blanketed his horses instead of putting them in the barn because the day was so warm. He had not been at the Peterson home for more than twenty minutes when a roar of wind shook the house, alarming the whole household. The doctor immediately started out for his home in St. Peter with the wind at his back; but the storm became more and more severe until the horses were a mere blur in the driving snow and road dirt. He was almost to the village when he was forced to let the horses go. Fortunately, after struggling through countless drifts, he stumbled upon a fence which he was able to follow to a farm house. There he found that the farmer was still in town and that he and the farmer's wife would be obliged to saw wood to keep from freezing. He slept in the attic with only his fur coat for a cover and with the snow drifting in through the many cracks. For three days he did the chores until the farmer could return.

A Le Sueur County doctor had a similar experience. The husband of a sick woman came into the village to summon him. The doctor went immediately to his patient while the husband was delayed in town, getting supplies. A severe storm arose so that the husband was unable to return home; and for three days the doctor had to keep the farm stoves going by working with the bucksaw and had to care for the farm animals and do the other chores.

Dr. H. B. Aitkins of Le Center recalls having to attend an obstetrical case five miles outside of town during a snowstorm. The farmer called for him with a team and bobsled, but on the way the sled had to be abandoned, and the doctor, with his heavy obstetrical satchel, and the farmer continued on horseback until one horse was exhausted and the trip had to be completed with only the remaining horse. The birth was delayed and, since he was afraid that if he left the house he would be unable to return, the doctor remained at the farm during the entire blizzard.

The poverty of the early settlers was for the most part extreme; hence payment to physicians was very uncertain. Government terms for homesteading were occasionally changed, and at one time a jest was current to the effect that the government was willing to bet 160 acres of land against a small payment that one could not live on the land for five years without starving to death. Most settlers eked out a living clearing forest land, for which wealthy persons would pay six dollars an acre; making maple syrup, selling muskrat or mink hides, catching fish, killing prairie chickens, and gathering ginseng. This latter activity of digging the ginseng root and selling it to dealers proved very profitable for some. The root—which actually had no pharmaceutical or therapeutic value—because of its resemblance to the body of man, that is, in the form of a fork, with an occasional intermediate rootlet, led the Chinese to attribute to it the power of restoring virility to the aged and impotent. It was because of this belief that many an early physician was indebted to the Chinese, who paid cash for the root of ginseng and thus kept early

physicians' families from starving. It has been recorded that at one time the village of Henderson had one doctor, one baker and *seven* ginseng dealers.

Dr. Otis Ayer had the distinction of being the pioneer physician in Le Sueur County. About 1856 he arrived in the village of Le Sueur, the first settlement in the county, situated on the Minnesota river. During the New Ulm massacre* Dr. Ayer was one of the physicians who cared for the many wounded. He was a graduate of Dartmouth and Jefferson Medical college. A physician of the old school, he was dignified, able and devoted to his work. These qualities made him one of the outstanding physicians of this part of the country. Dr. Ayer practiced in Le Sueur village until his death.

Four miles west of the village Dr. W. W. Mayo, father of Drs. W. J. and C. H. Mayo, settled, shortly after Dr. Ayer. In 1859 he moved into the village and built a comfortable house, according to pioneer standards. Two years later he went to New Ulm as a surgeon for the United States Army, and early in 1863 he moved to Rochester where he founded the famous clinic.

Another early resident was Dr. Andrew J. Rutan, who represented the county in the first state legislature (1857-1858). At the time he was living in Lexington township, but in 1862 he moved to Le Sueur and practiced medicine in the village for about a year. There is no record of any other physician making his home in Le Sueur County during the fifties.

Dr. A. C. Smith practiced in the town of Le Sueur during the early sixties. A newspaper note gives us the information that the doctor helped to bury the Indians killed at Scotch Lake in 1862. Some years later he moved to Cleveland. In 1863 J. L. Whipple opened an office in Cleveland. After the war S. B. Umphrey came to Cordova. He practiced in the county for many years. In 1865 the first drug store was opened by H. H. Mackstroth, who also practiced medicine to a limited extent during the sixties. Other newcomers about this time were F. Vasterling (who died at the age of ninety in 1905), A. F. Randall, H. Davis, J. Horst and W. H. Woods. In 1869 James Holmes, a graduate of Jefferson Medical college, and S. M. Morrison, one of the many "botanic" physicians then popular, came to Le Sueur.

It is probable that the county officials began to appoint physicians to care for the poor early in this decade. The first record we have is the appointment of S. B. Umphrey.

In November, 1869, Dr. Umphrey, together with Drs. A. F. Elliott, R. Randall and H. Davis, gathered at Cordova to form a county medical society in order to meet the requirements of an act passed by the state legislature "to protect the people of Minnesota from empiricism and imposition in the practice of medicine and surgery."† The law was a much needed one in the state, since the more isolated the practitioner and the greater the difficulties of practice, the greater was the need for good preliminary preparation. At the same time, as noted previously, there was less likelihood that these requirements could be met, for during the sixties and seventies, medical and surgical education at all worthy of the name was to be obtained only by attending Eastern medical schools, which cost a great deal in time and money.

The state law requiring that a man have either a diploma from a medical school or a certificate from a medical society in order to practice medicine in the state was repealed the year following its approval, and it was not until 1883 that an adequate measure was passed by the state legislature. The provisions of the Act of 1869 did not apply to anyone who had been in practice for five years prior to its passage. The

*See Medical History of Brown County.

†Chapter 41, Laws of 1869, approved March 9, 1869, and repealed February 24, 1870.

county medical society, formed in compliance with the state law, is peculiar in that it constituted itself a local examining board for physicians. Lack of further mention of the society in the local newspapers leads one to believe that its life was a short one.

The articles of incorporation of this Medical and Surgical Society of the County of Le Sueur are here given:

I

Place of Location: Cordova.

II

Purpose: The advancement and improvement of the members thereof in the sciences of medicine and surgery, and in the practice thereof, and the various subjects appertaining or germane thereto, and by mutual examination and interchange of opinion and experience among the members thereof touching the said sciences and the practice thereof, at stated or other meetings of the members of the corporation; and to instruct and examine persons pursuing the study of the said sciences of medicine and surgery, and the granting of certificates of qualification to practice medicine and surgery or either of them to persons of good moral character, who shall upon full examination be deemed qualified to practice the same according to the provisions of the act entitled *An Act to Protect the People of Minnesota from Empiricism and Imposition in the Practice of Medicine and Surgery,* approved March 9, 1869.

III

Any person, possessing the qualifications prescribed by the said act to practice medicine or surgery or any person of good moral character who is pursuing the study of medicine and surgery or either of them with intent to qualify himself for the practice thereof and to engage therein, may become a member of this corporation by signing the articles and paying the sum of five dollars.

IV

Examinations of persons applying for certificates of qualification to practice medicine and surgery or either of them, shall be made at a stated or special meeting of the members of said corporation, and shall be conducted in such manner as the members present direct. When so granted, such certificate shall be signed by the president or vice president, attested by the secretary and sealed with the corporate seal of this society.

V

The officers of the corporation are: A. F. Elliott, president; R. Randall, vice president; S. B. Umphrey, secretary; H. Davis, treasurer.

Dated: 20th of November, 1869.

Recorded: 24th of November, 1869, 4 P.M.

(1870-1879)

Among the physicians who practiced in Le Sueur County for short periods during the first years of the seventies were M. W. Scott, Guy Daly and D. B. Collins. Isaac Cosner and C. Hoberg of Nicollet County often extended their practices into Le Sueur County. C. J. Spratt, a graduate of Bellevue hospital and college, came to Le Sueur in 1870 and left in 1883. George D. Swaine also practiced there for about ten years (1872-1882). E. P. Case, a prominent physician in the county and an early member of the state medical association, opened an office in Waterville. Among those who came a few years later were T. W. Hammond, H. C. Leonard; J. A. Scammon, J. S. Seely, J. W. Dal, W. G. Goffe (1881-1884) and Lambert Laurens. Few of these men remained permanently. In the fall of 1879 the town of Le Sueur had a total of six resident physicians.

Throughout these years there were occasional deaths from typhoid fever. In Ottawa there were several mild cases of smallpox in 1870. Two years later Mackstroth and Sons' Drug Store was advertising smallpox vaccine, apparently as a result of a number of cases of smallpox in neighboring counties.

Although the local papers seem not to have mentioned it, we learn from St. Peter, across the river, that scarlet fever was raging in Le Sueur in the spring of 1877,

and that a number of cases had proved fatal about twenty-four hours after attack. In 1878 an epidemic of mumps struck the children of Lexington township, and a few months later there was a general epidemic of cholera morbus. Diphtheria prevailed in Cleveland and Ottawa in 1879.

Dr. Otis Ayer, who regularly attended meetings of the Minnesota State Medical Association since its founding, served as its president in 1878. Dr. E. P. Case, another local physician, became a member at that time.

Among those who served as county coroner were Charles J. Spratt (1872), S. B. Umphrey (1873, 1877, 1878) and J. S. Seely (1879). By the end of the period the office of county physician was awarded to lowest bidders in each of the five commissioners' districts. Salaries usually ranged from about fifty to eighty dollars. Sometimes physicians were not paid regular salaries but were paid for each separate call. In 1879, for example, E. P. Case agreed to act as county physician at fifty cents a visit and thirty-five cents a mile, one way, and to furnish medicines himself. Occasionally other physicians also turned in bills for work done for the poor.

During the later years of the period there appeared from time to time in the newspapers articles concerning public health. Dr. H. C. Leonard, for instance, had an article on diphtheria in which he quoted Dr. Charles Hewitt, secretary of the Minnesota State Board of Health, urging people to use stone or brick curbing rather than wood so as to assure safer drinking water. Another of Dr. Leonard's articles, entitled *Homeopathy versus Alleopathy,* endeavored by means of very queer statistics to prove that the death rate for the most common diseases was 100 per cent using the latter treatment and far less under the former.

An ever-increasing number of physicians came to Le Sueur County during the eighties, and the short periods of time that many of them stayed give evidence that the population was not sufficiently large to support them all. Collections were bad, owing to the poverty and transiency of many of the inhabitants. In many instances remuneration for services came in the form of farm products. One of the druggists in the western part of the county said that for seven years his prescription files averaged one prescription in seven days and that drugs were generally bought in five-cent lots.

There was probably an average of twenty to twenty-five practitioners in the county in any given year during the period. At one time (1884), there were ten physicians in the town of Le Sueur. Among the newcomers in the early days of the decade were W. W. Clark, William Dodge, H. Mager, J. A. Reynolds, H. E. Lucas, C. P. Dolan, William Netter, and J. G. Bemis. W. H. Fisher, a homeopath and his wife, Ann, practiced in Le Sueur for a number of years. Franklin A. Dodge, a graduate of the University of New York City, opened an office in 1886 and became one of the prominent physicians in this part of the state.

(To be continued in the April issue.)

President's Letter

RURAL HEALTH — WHOSE PROBLEM?

Too often we, as a nation and as individuals, are more concerned about our illnesses than our health.

The sharpest application of this truism is, perhaps, found in the rural areas of the United States where medical care is admittedly uneven in distribution and where preventive medicine and safety programs have to combat staggering odds to chalk up semi-satisfactory records.

Who's to blame for the delayed progress of rural health? The farmers? In part. The doctors? To a degree. The medical schools? They too must share the responsibility, as must all of the organizations designed for and including rural people.

Certain it is that the Washington planners who would force our free economy into the straitjacket of socialism are looking hopefully at rural health statistics for justification of such drastic action. For example, posing as a textbook, a volume called *Rural Health and Medical Care* has recently come off the presses. Depression-year statistics and typical "Americans can't afford health" propaganda have been blended together with the help of such medical-muddlers as Drs. Isidore S. Falk and Michael M. Davis and, from the Social Security Administration, Margaret Klem.

This is typical of what we observe constantly and may continue to expect from the Ewing coterie. After painting the rural health picture in blacks and greys, they attempt to show how "free medical care" would brighten the rural environment.

Scientific medicine, public health workers, farm groups do not claim such a guaranteed cure-all. Experience and observation have proved that there is no one answer to the rural health question, just as there is no one cure for cancer. But the answers will be found in both cases by the scientifically tested method of pooling the results of experimentation and continuing to build on a proved foundation.

How this theory works is evidenced by the rural health conferences sponsored annually by the American Medical Association's Committee on Rural Health. More than 600 leaders of all groups and organizations which interest themselves in bettering rural health met February 4 and 5 at the Palmer House, Chicago, and discussed every phase of farm welfare, from increasing soil fertility to securing more doctors for rural areas.

It was generally agreed that the voluntary way is the desirable way and plans were considered for extending Blue Cross and Blue Shield coverage and assisting other forms of medical insurance. Inducing doctors to choose rural practices, too, was deemed a joint responsibility; medical schools must encourage rural migration; farm communities must aid in obtaining the facilities for practice and in making the rural environment satisfactory for the doctor and his family. Safety and preventive health programs will continue as focal points in the objectives of many organizations.

By working together, erasing duplication and going toward preconceived goals, we will solve the rural health problem; we will have a complete cure, not just the temporary absence of symptoms under socialistic anesthesia.



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

THE BIRTH OF MEDICAL FREEDOM

THE publicity campaign that the medical profession is initiating to bring to the people of the United States the advantages of private practice over government-supplied medical care, so that they through their representatives in Congress may chose intelligently, may well determine the most momentous political issue of our generation. The question resolves itself into essentially a choice between compulsory government insurance, with the government providing all medical care through taxation, and voluntary health insurance, with the maintenance of the American system of free enterprise. Government medicine is socialism, whereas voluntary health insurance preserves the freedom of the individual. The socialization of medicine has been the initial step in other countries sought by the socialists in the establishment of a completely socialistic government. For this reason, the medical profession is spearheading a fight against socialism and should have, and doubtless will have, the support not only of allied groups such as the dentists, druggists, hospitals and pharmaceutical houses, but of all private industry. The socialists in our government and labor unions are obviously adopting the war slogan of divide and conquer. If the citizens of our country who believe in free enterprise wish to prevent the ultimate complete socialization of our economy, it behooves them to join the medical profession in opposition to this movement.

The enormous growth of hospital and medical insurance in our country the past few years indicates the belief on the part of our citizens that insurance is a means of meeting the cost of sickness. There is little indication of any great demand on the part of the people for the government to take over their medical care. The demand comes from a comparatively small group of government officials in Washington and a few labor union officials who are socialists. The various Wagner-Murray-Dingell bills have been written by employes of various government bureaus in Washington. The very preamble of the recently submitted bill is misleading by inference when it states that this national health program is necessary to promote personal relationships between physicians and patients; to promote more effective co-ordination among general practitioners, specialists, nurses and hospitals; to enable patients to have more effective free choice in selecting their physicians; to provide adequate health services consistent with the highest standards of quality, to be administered locally in accordance with American ideals of democracy and individual freedom. The medical profession maintains that the proposed bill would do just the opposite of all this.

Already there is evidence that the proponents of the bill are not hesitating to smear the medical profession. Oscar Ewing, Chief of Social Security, has already accused the medical profession of selfishness in opposing the bill and of raising money for the most powerful lobby in Congress—both misstatements. He insists on distorting the statistics as to rejections in the draft to indicate the inadequacy of medical care under our present system.

The fight is on. We, as a profession, are fighting for our independence. It is worth while fighting for and is worth much more than the twenty-five dollars we have assessed ourselves. Those who do not think this freedom is worth the price, let them stay out. There may be some question as to the constitutionality of an assessment of this amount. Let those who want to haggle over the point do so, but let those who want to preserve the institution of private practice send their checks, made out to the American Medical Association, to our State Association office.

The preliminary announcements of the methods of publicity to be used in our National Education Campaign are impressive. Emphasis is to be placed on educating the people. The contact of doctors with their patients is to be stressed, and leaflets will be supplied for inclusion with monthly statements. Similar material will be furnished for allied professions and industries. Business and civic associations, farm, fraternal, religious and veterans organizations will be asked to help.

The question has been raised by some newspa-

pers as to whether they can expect paid advertisements. Those in charge of the campaign have decided it is inadvisable to undertake any broad advertising campaign in the newspapers or over the radio ostensibly against a piece of legislation. When it is realized that a quarter page advertisement in each of the 12,000 daily and weekly newspapers in the country would cost a half million dollars, the futility of such a program becomes apparent. It would likewise be a mistake to patronize a selected few newspapers. Publicity material, however, will be mailed to the newspapers, many of which consider our cause their cause.

If the profession fights to a man and each does his part, with the help of those who cherish their freedom from bureaucratic control, the battle will be won.

OLMSTED-HOUSTON-FILLMORE-DODGE SUPPORTS AMA SOCIALIZED MEDICINE FIGHT

FIRST official county response to the American Medical Association's assessment request has come from the Olmsted-Houston-Fillmore-Dodge County Medical Society. Checks totaling almost $14,000 have been relayed to the state office.

Ninety-eight and seven-tenths per cent of the staff of the Mayo Clinic and Foundation have given their support to the American Medical Association's educational campaign to defeat compulsory health insurance. Additional staff members, now ill or absent from Rochester, will, it is anticipated, make a comparable response to the AMA's appeal.

It is stimulating, indeed, to observe this demonstration of medical society unity, particularly in view of recent newspaper reports which insinuated that discord was arising on the question of participation in AMA plans.

"The members of the staff and the fellows of this institution are well aware of the efforts of the American Medical association to devise methods for distributing medical care more widely by means of voluntary prepayment plans," stated Arlie R. Barnes, chairman of the Clinic's Board of Governors, and Victor Johnson, director of the Foundation, "and, almost unanimously, they desire to support these efforts.

"It is to be hoped that such methods for extending medical care as might be devised by the American Medical Association will safeguard or even improve the present high quality of medical service, and that the program will be such as to enlist the continued wholehearted support of virtually all the physicians of the country. It is highly desirable that physicians present a united front in efforts to improve the distribution of medical care."

Earlier publicity on what an official of the local medical society refers to as "the sincere remarks of a small minority," engendered some misunderstanding about the position of the Clinic and Foundation staff on the AMA anti-socialized medicine program. Prompt response to the AMA assessment request has established, beyond doubt, Mayo physicians' belief in the methods to be employed by the American Medical Association in maintaining freedom of medicine.

G.A.E.

NARCOTIC PRESCRIPTIONS

THIS ISSUE contains an article by Mr. A. M. Bangs, District Supervisor of the Bureau of Narcotics in Minneapolis, on the subject of telephoned narcotic orders. The filling of narcotic prescriptions has been a thorn in the flesh for physicians and druggists alike ever since the present regulations were established. There need be no difficulty when the physician telephones a prescription from a residence and leaves a prescription there to be picked up by the druggist on delivery. If, however, he neglects to leave the prescription, the druggist is not allowed to leave the medicine, and trouble ensues. Also, if a physician, receiving a telephone call from a patient requesting a prescription, calls the druggist and promises to send him the prescription and then fails to do so, there is trouble. If the need is urgent, the druggist is allowed some leeway in sending the drug before he receives the prescription but he must have the prescription for his files. So it behooves the physician to carry out his part in providing the prescription and not to vent his ire on the druggist who did not make the law but is periodically checked to see that he is obeying it.

The federal law applies only to narcotics and not to the barbiturates. Our state law is more stringent than the federal. The only narcotic allowed by the state without a prescription is cough mixture containing 1 grain or less of codein to the ounce. Prescriptions must be used for the barbiturates but orders for refills may be given over the telephone.

As long as there are individuals who lack self-control when it comes to the use of narcotics and barbiturates, laws to control consumption will be

necessary, not only for the welfare of the individual but for society at large. Although regulations seem rigid and bothersome, they have proved necessary in the control of these drugs, as most physicians know.

DIPHTHERIA

IN 1948 there were only 129 clinical cases of diphtheria reported in the state, with seventeen deaths. This is the lowest record in history. This does not mean, however, that the profession should feel complacent over the progress made. Diphtheria is one of the few diseases which can be completely controlled, and there should be no relaxation on the part of the profession or the public in the immunization program.

As a result of the comparative rareness of the disease today, many recent graduates have never seen a patient with clinical diphtheria. Diphtheria, in spite of its rarity, should always be borne in mind when the patient complains of a sore throat. The presence of a dirty gray membrane which, though characteristic, is not always present, should result in the taking of cultures; and if the lesion strongly resembles diphtheria, antitoxin should be given at once instead of waiting for the report from the culture.

The incidence of diphtheria varies from year to year, and local outbreaks are common. It behooves the profession to be diphtheria-minded if the occasional case is to be detected promptly and the spread of the infection prevented.

DOCTORS FOR ARMED FORCES

A FEW WEEKS ago a letter was sent by Dr. R. L. Sensenich, president of the American Medical Association, to approximately 7,000 physicians under the age of twenty-six, strongly urging them to volunteer for military service. Some 900 postal cards which accompanied the letters were returned, and about 500 requests for application forms for commissions have been received. This is not enough to meet the urgent need. About 2,000 doctors now on active duty will be released within the next few months, and more than this number of new enlistments will be needed, not only to replace those who will leave the service but to care for the expansion of the armed forces provided for by the Selective Service Act of 1948.

The names of those doctors under the age of twenty-six who have not responded to Dr. Sensenich's letter have been sent to the secretaries of the state medical associations, and personal contacts are being planned through county societies. If enough recruits can be obtained from this group under twenty-six, the necessity of a draft of the profession, a step which has never yet been necessary, will be obviated. The financial compensation of medical officers today is especially attractive. This, added to the stimulus of patriotic duty, should produce the desired response.

The drafted boys are doing their part under compulsion, it is true. Their medical needs must be provided for, preferably by volunteer enlistment of doctors or by draft. Patriotism is not limited to the emergency of war.

PRINCIPAL ORGANIZATIONS PROMOTING COMPULSORY SICKNESS INSURANCE

In order that our readers may know the principal organizations promoting compulsory sickness insurance and their personnel, we are listing them:

The Committee for the Nation's Health is located at 1790 Broadway, New York City. Dr. Channing Frothingham is chairman of the committee, and Michael M. Davis is chairman of the Executive Committee. Included on the committee are: Mrs. Eleanor Roosevelt, Gerard Swope, David Saranoff, Mrs. Gardner Cowles (a staff member of *Look* Magazine), Abe Fortas (a law partner of Thurman Arnold), and the presidents of the A. F. of L. and the C. I. O. The membership consists of some 2700 persons, 22 per cent of whom live in New York, and less than 8 per cent of whom are physicians.

The Physicians Forum is a group of physicians also working for compulsory government insurance. Dr. Earnest Boas of New York is chairman. According to Dr. Boas' testimony in Congress, the Forum has about 1000 members, of whom almost 600 are located in New York State and about 100 are located west of the Mississippi.

The Committee of Physicians for the Improvement of Medical Care, according to Dr. John Peters, consists of some forty physicians, most of whom are in the New York-New England area. Dr. Edward L. Young of Boston is chairman, and among the other officers are: Dr. Channing Frothingham, Dr. John Peters of New Haven, Dr. Ernest Boas of New York, and Dr. Dean Clark of New York.

The Committee for the Research of Medical Economics, also located at 1790 Broadway, New York, has as its chairman, Michael M. Davis.

The name of Dr. Boas appears on the membership of all four organizations; Dr. Peterson, on three; and Dr. Frothingham, also on three. There is an apparent interlocking of directors and members in the four organizations.

TELEPHONED NARCOTIC ORDERS

A. M. BANGS
District Supervisor, Bureau of Narcotics
Minneapolis, Minnesota

The Harrison Narcotic Law, as re-enacted in the Internal Revenue Code, is designed to direct the manufacture and distribution of narcotic drugs through medical channels to consumption for medical purposes only. These are the fundamental, underlying principles and objectives of the Federal Narcotic Law and the Minnesota Uniform State Narcotic Act. The related regulations designed to achieve this are clear and necessary elements in the suppressing of addiction to narcotic drugs.

Despite the clearness of the law and regulations, and the fact that they have been in effect for about thirty years, we still find entirely too many narcotic prescriptions in drug store files which were improperly executed by the issuing physician.

We also find a great number of notes and unsigned pieces of paper in drug store files that reflect the filling of telephoned orders for narcotic drugs. (Unless a prescription is properly written and signed, and for a legitimate purpose, *it is merely a piece of paper).*

Almost every day we receive complaints from druggists about physicians insisting by telephone that they supply patients with narcotics without a prescription.

This places the law-abiding pharmacist in an embarrassing position because, if he supplies the narcotic drugs without receiving a prescription first, he is definitely violating the law. If he shows reluctance to comply with the physician's telephoned request, the physician often becomes very indignant, and often tells the pharmacist "If you won't take it, I'll call a druggist who will," and in many cases is able to make his threat good because there are druggists, unfortunately, who will accept and supply narcotic drugs on telephoned orders.

The practice of telephoning narcotic prescriptions indiscriminately has presented a real problem of diversion of narcotic drugs to addicts.

The Bureau of Narcotics has encountered a great many instances where a drug addict telephoned a druggist, representing himself to be a physician, and caused the druggist to deliver narcotic drugs which were used only for the gratification of the addict and his associates.

By telephoning the druggist and representing himself as a physician, an addict recently obtained more than one thousand pantopon and morphine tablets from sixteen different drug stores on forty-five different occasions. A large portion of the drugs thus obtained were sold by the addict to other addicts at $3.00 to $5.00 per tablet. This demonstrates that if the telephoning of orders for narcotic drugs were permitted, much greater diversions would result.

The Physician Is Responsible

The Bureau of Narcotics and its field agents want to co-operate in every possible way with physicians and druggists in relation to the observance of the laws governing the dispensing of narcotic drugs, for we have a law to enforce and it is our duty to enforce it.

The Law Applies with Equal Force to Physician and Druggist

The physician is the party of original responsibility. There is no good reason why he should not obey the law and write and sign all of his prescriptions for narcotic drugs. If he does not, the conscientious druggist should absolutely refuse to accept his telephoned narcotic orders or improperly executed prescriptions for narcotic drugs.

Violations cannot be tolerated and the law must take its course when they are found.

Formal Requirements for Narcotic Prescriptions

1. The furnishing of narcotic drugs pursuant to telephone advice of practitioners is prohibited, whether prescriptions covering such orders are subsequently received or not, except that in a genuine emergency a druggist may deliver narcotic drugs pursuant to a telephone order, provided the druggist is supplied with a properly prepared prescription at the time of delivery.

2. A physician must not use his prescription form to obtain narcotic drugs for general office practice. Narcotic drugs desired for general office practice are obtainable on official order form from a qualified manufacturer or wholesale dealer. An order for narcotic drugs for general office practice, written on a prescription blank, is not a lawful prescription within the meaning of the law and can have no effect to validate the sale which is illegal.

3. A prescription for narcotic drugs shall be dated as of and signed on the date when issued and shall bear the full name and address of the patient, and the name, address, and registry number of the practitioner. A physician may sign a prescription in the same manner as he would sign a check or legal document as, for instance, J. H. Smith, John H. Smith, or John Henry Smith. Prescriptions should be typed or written with ink or indelible pencil; if typewritten, they should be signed by the practitioner. The refilling of a prescription for taxable narcotic drugs is prohibited.

4. A prescription, in order to be effective in legalizing the possession of unstamped narcotic drugs and eliminating the necessity for use of order forms, must be issued for legitimate medical purposes. The responsibility for the proper prescribing and dispensing of narcotic drugs is upon the practitioner, but a corresponding liability rests with the druggist who fills the prescription.

5. An order purporting to be a prescription issued to an addict or habitual user of narcotics, not in the course of professional treatment, for the purpose of providing the user with narcotics sufficient to keep him comfortable by maintaining his customary use, is not a prescription within the meaning and intent of the act; and

(Continued on Page 330)

From the Bureau of Narcotics, 314 U. S. Court House, Minneapolis, Minnesota.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

RURAL HEALTH ISSUE MORE CRITICAL NOW

Physicians are finding that the illnesses of their rural patients are being complicated by a new set of symptoms, labeled variously "compulsory health insurance," "government medicine" and "sickness insurance."

The rural population is looked upon by the socializers as a vast and fertile field for the sowing of collectivist ideas. The first crop they wish to reap is a system of governmentally administered medical and hospital care.

Fortunately, rural people for the most part are individualistic in character; agriculture is basically an illustration of private enterprise at work. Through such organizations as the Farm Bureau, they strive for voluntary co-operation to further common goals; through Blue Cross, Blue Shield and commercial policies, they have provided for the financial emergencies of sickness; by co-operative thinking they are seeking to solve many another problem of rural life which involves health and welfare.

More than 600 leaders from farm and health organizations met February 4 and 5 at the Palmer House in Chicago to phrase answers to the question, "How can we achieve better health for the people of rural United States?"

Points of view represented at the session, sponsored by the AMA's Committee on Rural Health, diverged from medical schools to milk producers' associations; but the concept of problems and the suggestions for solutions to those problems did not diverge so widely.

Occasionally a familiar phrase from the Ewing fantasy echoed through the meeting—"325,000 die needlessly every year," "medical care is beyond the reach of too large a segment of our population," "a system of compulsory health insurance would guarantee an even distribution of medical care."

But more typical was this comment:

". . . these conferences on rural health have set the pattern for people to get together to discuss openly what they should do to provide for their own needs and find ways of solving their own problems," pointed out Aubrey D. Gates, associate director of the Arkansas Agricultural Extension Service. "If a satisfactory program for rural health facilities is not worked out by the people themselves—both the lay and the professional groups—it is a fairly safe assumption that one will be developed by an Act of Congress to be administered by the federal government. To me, this is socialized medical care of the most damnable sort."

Agreeing with Mr. Gates, Mrs. Margaret K. Taylor of Washington, educational director of the National Co-operative Milk Producers Federation, added:

"We believe that improvement of community rural health can be made through a constructive program of education and service such as that being conducted by the American Medical Association through its Committee on Rural Health."

The Milk federation, a marketing organization for dairy farmers in forty-seven states, is conducting a four-point program for improved farm health:

"1. Encouragement of prepaid medical, hospital and dental care on a voluntary basis;

"2. Federal aid to improve health standards through education and research;

"3. An expanded school lunch program;

"4. Support of federal-state programs for the control and eradication of bovine diseases.

Distribution of medical care on a cold, matter-of-fact basis cannot be a success, the conference was told. Equalizing medical care by moving doctors about like chessmen does not take into consideration the doctor-patient relationship.

Said Dr. Ward Darley:

"Medical care, no matter how superior it may be from the scientific standpoint, cannot be truly effective unless the patient-physician relationship is such as to permit the physician to make the maximum use of his own personality as an agent of comfort and therapy."

Dr. Darley, executive dean of the health sciences and services, University of Colorado School

of Medicine, added a few comments on specialization, summarizing: "While this trend has added to the cost of medical care, as the costs of medical care have increased, so have our survival rates."

Farm safety and diseases whose symptoms and aftermaths are shared indiscriminately by mankind and animals came in for consideration by the conference.

Cautioning against undue complacency about the control of these man-animal diseases, Dr. H. B. Mulholland of Charlottesville, Virginia, said, "Education of farm people in the fundamentals of transmission of these diseases in animals and man is paramount, and constant vigilance must be maintained, even though some of them are seemingly well under control, else they will break out afresh."

Accident prevention was also accorded a position of prominence in the discussion groups. "Farm accidents are taking an annual economic toll of nearly one billion dollars," claimed Maynard Coe of Chicago, director of the farm division, National Safety Council. "Accidents to farmers cause enough lost time in a year to produce more than half the average annual wheat crop in the United States."

He reported that there are about 19,000 accidental deaths annually on American farms. More than one-third of these occur in homes, with falls, burns, poisons, suffocation, firearms and drowning the principal causes. "Agriculture is far behind most of the other groups in safety endeavors," he asserted. "Only recently has a beginning been made to reduce farm accidents."

Concluding the conference, the AMA Committee on Rural Health adopted a comprehensive program to bring a high standard of health and medical care to rural communities:

"1. State and public health services for general community hygiene and communicable disease control; public health nursing, well-baby conferences and clinics;

"2. The Hill-Burton Hospital Construction act operating where the people of a community demonstrate sufficient desire for such facilities.

"3. Medical scholarships provided by medical associations, Farm Bureaus and through legislative appropriations to be given to deserving boys and girls, without discrimination, for medical and nurses' education where they agree to practice for a time in rural areas.

"4. Agricultural school extension services where they utilize their home demonstration courses, 4-H clubs, health specialists whose special duty it is to organize health councils in the counties for the purpose of health education and where appropriate to apply for Hill-Burton facilities; the teaching of better farm methods, better soil conservation and soil building practices, better grain and productive livestock methods such as calf and pig clubs, five-acre club lots, better cost accounting and business method.

"5. Parent Teacher associations where they encourage school children examination for hearing, sight, heart, hernia, immunization, school hygiene, as well as physical education.

"6. Special health groups such as tuberculosis, polio, cancer, heart, which do considerable educating within narrow limits.

"7. The application of voluntary prepaid medical and hospital care plans to rural communities, taking into consideration that several of the large farm groups have their own indemnity prepaid medical and hospital plans.

"8. A promotion of state and county health councils, the medical profession acting co-operatively with organized farm groups and other civic, church and school organizations and special health groups for the purpose of health education and health activities of local character.

"9. A plan to bring the medically indigent, or low income, farmer into voluntary prepaid medical plans, which may involve some state financial aid.

"10. Use of the health education programs of farm groups.

"11. Encouragement of the civilian population, as distinguished from governmental official action, to help itself."

ECONOMIST SURVEYS HOSPITAL ACTIVITIES

Economics of the hospital system as he found them in New York and as they would apply elsewhere in the United States were reported by Eli Ginzberg, Ph.D., professor of economics, Columbia University, when he spoke at a meeting of the Council on Medical Education and Hospitals of the American Medical Association February 6, at the Palmer House, Chicago.

He came to the conclusion that hospitals could become a more efficient operation if more attention were paid to the administration and economics thereof. For example, he pointed out, hospital councils, tying in the facilities of a region, would eliminate the duplication and/or imbalance of facilities that exists in some areas now. "Hospital plans of the United States grew up in an era of free competition and no consideration was given to the location of nearby facilities."

Furthermore, he suggested that 70 per cent of nursing functions could be performed by nurses having nine to twelve months of training, provided that the remaining 30 per cent was taken care of by more highly trained nurses, following what he called the "teamwork approach."

COLUMNISTS LASH OUT AGAINST SOCIALISM

Some fifteen American newspaper columnists have lined themselves up against socialism as the onslaught against the first democratic defense—the private practice of medicine—proceeds.

Among the more recent expressions, in book form, is Lawrence Sullivan's *The Case Against Socialized Medicine* which he dedicates "To the men and women of American Medicine, who are too busy in good works to answer the slanderous darts of the bureaucrats."

PARENT TEACHER GROUPS SEEK CONTINUED AID

Minnesota Parent Teacher associations are asking for continued doctor co-operation in their "round-up" program which aims to have all children, entering school for the first time, examined by the family physician and their physical defects corrected, according to the doctor's advice.

The advisory committees of the state and national PTA Summer Round-Up are headed by practicing physicians and the program has the sanction of both the American Medical Association and the Minnesota State Medical Association.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
St. Paul, Minnesota

Julian F. DuBois, M.D., Secretary

St. Paul Cook Pleads Guilty to Charge of Abortion

Re. State of Minnesota vs. Gordon T. Berger.

On January 25, 1949, Gordon T. Berger, forty-one years of age, 1376 North Victoria Street, Saint Paul, entered a plea of guilty in the District Court of Ramsey County, to an information charging him with the crime of abortion. Berger was sentenced by the Hon. John W. Boerner to a term of not to exceed four years in a state penal institution, the sentence being suspended and the defendant placed on probation for four years.

Berger was arrested on November 4, 1948, with one Lula M. Sloan who stated that she was Berger's common-law wife. They were arrested at their residence 1376 No. Victoria Street, Saint Paul, following an investigation by Minneapolis and Saint Paul police officers of an abortion performed on a Saint Paul divorcee. The investigation disclosed two women at the home of the defendants who had been aborted the day before. The patients were removed to Ancker Hospital in Saint Paul, and the defendants placed in jail. On November 5, a complaint was issued against both Berger and his common-law wife charging them with the crime of abortion. Upon being arraigned in the Municipal Court of Saint Paul on November 6, the case was continued to November 16, for a preliminary hearing. Subsequently the case was continued to November 30, to December 20, and on January 3, 1949, both defendants waived a preliminary hearing and were held to the District Court for trial. On January 6, the cases were set for trial for January 25. On that date, Berger entered a plea of guilty, and the case against the defendant Sloan was dismissed on recommendation of the County Attorney of Ramsey County, when it was diclosed that her participation in the abortion work was merely to look after the patients after they had been aborted by the defendant Berger.

Berger claims that he was born at Harrisburg, Pennsylvania, February 22, 1907. At the time of his arrest he was questioned about his occupation and he replied: "abortionist." Berger stated that he had been performing abortions for about two years and that he made his living as a cook before going into abortion work. Berger performed the abortions by injecting a soap solution into the uterus.

Minneapolis Woman Pleads Guilty to Abortion Charge

Re. State of Minnesota vs. Elsie Mae Perreault

On January 17, 1949, Mrs. Elsie Mae Perreault, forty-two years of age, 2 South 11th Street, Minneapolis, was sentenced by the Hon. Levi M. Hall, Judge of the District Court, to a term of one year in the Minneapolis Women's Detention Home. The sentence followed the entering of a plea of guilty by the defendant on December 30, 1948, to an information charging her with the crime of abortion. In view of the fact that there was no evidence that the defendant had performed other abortions, the Court suspended the sentence and placed the defendant on probation for one year.

The defendant was arrested on December 7, 1948, by Minneapolis police officers when it was learned that a twenty-five-year-old unmarried Minneapolis woman was hospitalized at Minneapolis General Hospital suffering from the after effects of a criminal abortion. The abortion was performed on November 16, 1948, in the apartment of the defendant by the use of elm bark. $100 was paid the defendant for her services. The defendant admitted that she had no training as a nurse or midwife and stated that her knowledge about abortions was acquired by aborting herself in the same manner, on three occasions. The defendant is employed by a Minneapolis printing concern.

St. Paul Dentist Convicted of Abortion

Re. State of Minnesota vs. Earl S. Weber

On January 27, 1949, Earl S. Weber, fifty-two years of age, entered a plea of guilty in the District Court of Ramsey County, to an information charging him with the crime of abortion. Weber, a licensed dentist with an office at 424 First Federal Building, 5th and Cedar Streets, Saint Paul, performed an abortion on a twenty-eight-year-old unmarried Minneapolis woman for which he was paid the sum of $100. The abortion was performed by the use of a curette on January 18, 1949, at Weber's dental office. The patient became seriously ill and required hospitalization at Minneapolis General Hospital.

A plea for leniency was made to the Court on the grounds that Weber is one of four Negro dentists in Saint Paul and that his dental services are needed by the Negro population of the city. It was also stated to the Court that Weber had performed only one other criminal abortion, that one having been performed on a relative of the defendant. Judge John W. Boerner sentenced Weber to a term of not to exceed four years in the State Prison at Stillwater, stayed the sentence and placed Weber on probation for four years. Judge Boerner warned Weber that any violation of his probation would result in an immediate revocation thereof and that Weber would be taken to Stillwater to serve his sentence. Weber stated to the Court that he was born in Saint Paul and graduated from the School of Dentistry, University of Minnesota, in 1921.

Minnesota Academy of Medicine

Meeting of November 10, 1948

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, November 10, 1948. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 p. m. by the President, Dr. T. A. Peppard.

There were forty-nine members and two guests present.

Minutes of the October meeting were read and approved.

Dr. A. W. Ide read the following memorial to Dr. Robert Earl and a motion was carried that this be spread on the Proceedings of the Academy and a copy sent to the family.

ROBERT EARL—1872-1948

Robert Earl was born on a farm near Lansing, Iowa, on August 27, 1872. He was one of five children of Mr. P. O. Earl and Mrs. Hannah Anderson Earl.

Ten years after the birth of Robert, Mr. and Mrs. Earl moved with their family to Minneapolis, having decided to abandon farm life because Mr. Earl was afflicted with a heart murmur. This ailment was not fatal, however, for the father lived past his 97th birthday.

From the time of the move to Minneapolis, Robert Earl attended the public schools of that city, then the University of Minnesota, receiving his M.D. degree in 1896.

He was married in 1900 to Clara S. Swanstrom. He died on August 11, 1948, survived by his wife; a daughter, Mrs. James Slocum of Minneapolis; a son, Dr. John Earl of Saint Paul; five grandchildren; two sisters, Emily Earl and Hilda Anderson of California; and a brother, Dr. George Earl of Saint Paul.

Even a brief history of Dr. Robert Earl's life must emphasize the dual nature of his medical career. His activities as a practicing surgeon in Saint Paul reflect credit both on himself and on his profession. After his graduation in 1896 he served his internship at Bethesda Hospital, where he was influenced by his association with Dr. Edouard Boeckman and Dr. E. M. Lundholm. Partly as a result of their influence his interests were directed to the field of general surgery. After his year as an intern, he established himself in general practice. His formal training in surgery was continued in 1911 by a year of study in Europe.

In 1910 he was joined by his brother, Dr. George Earl. The partnership of the two brothers grew into what became the Earl Clinic. Dr. Robert Earl's son, Dr. John Earl, recently joined this Clinic.

The other major division of his medical career utilized an organizational and administrative ability in activities which had a profound and lasting influence on the community. He was president of the organization known as the Mounds Park Sanitarium, later known as the Northwestern Baptist Hospital Association. Under its original name this association sponsored and built the Mounds Park Sanitarium in 1906. The same organization, under its changed name and still under the Earl guidance, built Midway Hospital in 1926. He was also on a committee of three appointed by the Mayor of Saint Paul to aid in the location of what is now known as Gillette Hospital. He was active in varying degrees in all three of these hospitals after their construction, being a member of the staff of each.

Doctor Earl was a Diplomate of the American Board of Surgery, and was a member of the American College of Surgeons, the Western Surgical Society, the American Medical Association, the Minnesota State Medical Association, the Saint Paul Surgical Society, the Ramsey County Medical Society, and the Minnesota Academy of Medicine. His Inaugural Thesis for the Academy, entitled "Fractures of the Skull," was read on December 12, 1917, and published in MINNESOTA MEDICINE in July 1918. Other papers and frequent discussions were part of his active contribution to the societies of which he was a member.

By his surgical and organizational abilities and by his unfailing interest in the many activities in which he engaged, Doctor Earl established himself as a man of influence. His presence will be missed by the members of the Minnesota Academy of Medicine and by many others, but his influence will endure.

The Committee
ARTHUR W. IDE, *Chairman*
WM. H. HENGSTLER
C. C. CHATTERTON

Upon ballot, Dr. Walter P. Gardner, of Saint Paul, was elected a candidate for membership in the Academy.

Dr. William P. Sadler, of Minneapolis, read a case report on "Rare Types of Intra-Abdominal Bleeding."

RARE TYPES OF INTRA-ABDOMINAL BLEEDING

WILLIAM P. SADLER, M.D.
Minneapolis, Minnesota

There are many obscure causes of intra-abdominal bleeding due to hidden pathological states which severely test the diagnostic acumen of the most experienced. Even in the more usual and obvious diseases causing hemoperitoneum, the diagnosis is not always easy.

Among the commoner types of diseases causing bleeding intraperitoneally are: eroding primary or metastatic tumors of the liver, spleen, kidneys, pancreas, stomach, and bowel. Also, pathologic or traumatic rupture of a viscus, auto accidents, war injuries, industrial and athletic traumata, frequently cause this type of bleeding.

Other causes, less common, are, rupture of varices of and bowel. Also, pathologic or traumatic rupture of a viscus, auto accidents, war injuries, industrial and athletic traumata, frequently cause this type of bleeding.

Other causes, less common, are, rupture of varices of

the liver or round ligament, or of subserosal varices (omental, visceral and mesenteric); dissecting or luetic aneurysms of the aorta or superior mesenteric artery; angiomata of the liver and spleen, and rupture of the inferior epigastric vein.

Ordinary types of intra-abdominal bleeding of interest to the gynecologist are those due to ruptured Graafian follicles, corpora luteal cysts, strangulation of the ovary, tubes, and/or ovary and tube, ruptured ectopic gestation, endometrial cysts, and tubo-ovarian abscesses. Much less common is rupture of a broad ligament varix, rupture of a uterine vein during pregnancy or labor and rupture of a vein on a uterine fibroid from necrosis or stretching. Rupture of cesarean section scars and spontaneous rupture of the uterus during or before labor is not rare.

Spontaneous Splenic Rupture

So-called spontaneous rupture of the spleen is of interest to the internist, surgeon, gynecologist, neuropsychiatrist, otolaryngologist, and syphilologist.

In 1941, King reported the first case of spontaneous rupture of the spleen in infectious mononucleosis. In January, 1948, Timmes, Averill, and Metcalfe reported two cases with a review of the literature bringing the number of such cases to sixteen. Of these sixteen cases, a diagnosis of infectious mononucleosis was made in seven before splenic rupture, and in seven cases after rupture. The diagnosis was doubtful in the remaining two cases.

There were five deaths in this series, giving a total mortality rate of 31.25 per cent. Thirteen of these patients were operated upon with eleven survivals and two deaths. This shows an operative mortality of 15.38 per cent.

It is very probable that rupture of the spleen in infectious mononucleosis either spontaneously or due to minimal trauma may not be as rare as previously supposed. More alertness to the possibility of this disaster with its attendant high mortality in an otherwise benign disease, and prompter surgical intervention when diagnosed, will reduce the heavy mortality. While the spleen is enlarged, intra-abdominal strain should be avoided and abdominal palpation interdicted.

Rupture of the Malarial Spleen

Rupture of the spleen spontaneously or following minimal trauma occurs in many of the splenomegalies, fevers such as typhoid, and following influenza (one case), but the disease par excellence in which it occurs is malaria.

In January, 1948, Hershey and Lubitz reported a case of rupture of the malarial spleen and carefully reviewed the American and foreign literature. Their review brought the number of cases reported from 1917 to 1948 to sixty-four. They quote a review of Leighton, prior to 1917, in which seventy-two cases were reported.

Of Hershey and Lubitz's sixty-four cases, twenty-five splenic ruptures occurred in patients with naturally acquired malaria, while thirty-nine were recorded in patients with central nervous system syphilis who had been inoculated with malaria for therapeusis. Although this complication in naturally acquired malaria is considered rare, and is estimated by Manson and Bahr to occur once in one hundred thousand cases, it occurred three times in 30,000 malarial hospital admissions in the Canal Zone. It is a common cause of death in endemic malarial regions following trauma. It is said to cause 4.45 per cent of all malarial deaths in one section of India (Massari). According to Asteriades, allegedly normal, as well as malarial, spleens have ruptured during labor.

Other Splenic Ruptures

Several cases of spontaneous ruptures of so-called normal spleens have been reported. It is the author's view that some disease process or trauma is a factor in the rupture of these allegedly normal spleens.

McCarthy and Knapp reported two cases of splenic rupture in September 1944, one of which occurred in an infectious mononucleosis patient. (This case was not included in the review of Timmes, Averill, and Metcalfe in 1948.) Their second case developed in a patient in whom the pathologic diagnosis after splenectomy was "multiple hemangiomas of the spleen" with perforation of the capsule.

Case Reports

In the following report, the pathologist ascribed the cause of splenic rupture as probably due to rupture of a capillary cavernous hemangioma.

Case 1.—The case is that of an eighteen-year-old white girl who was admitted to the Minneapolis General Hospital May 15, 1938, because of pain in the lower abdomen, dizziness, nausea and vomiting during the ten hours previous to admission. Three weeks earlier she had developed pain in the right lower quadrant, accompanied by nausea and vomiting and was confined to bed for one week. At that time she came to the Receiving Department for examination. The gynecological staff diagnosed pelvic inflammatory disease and advised further bed rest. From then until admission to the hospital, she suffered with abdominal pain and occasional chills followed by fever. For ten days previous to admission, the patient complained of painful defecation. On the day of admission the patient went for an automobile ride, during which she became suddenly nauseated, started to vomit, and had to lie down because of weakness and dizziness. She became progressively weaker, and the abdominal pain increased. Her menses had been normal except for excessive flow and her last menstrual period had ended one week before admission. The patient had an abortion at the age of fourteen. She had had antiluetic treatments for the past six months. Past history and systemic history were otherwise negative.

Physical examination revealed that the patient was a well-developed, well-nourished, apprehensive, young woman. Her skin was pale, cold, and clammy. The head was normal. The lungs were clear. Radial pulse was not obtainable. Apical rate was 90 and heart tones were faint. The heart was otherwise normal. The blood pressure was 64/40. The abdomen was distended. There was marked tenderness and rigidity of the entire abdomen. Rebound tenderness was elicited. Pelvic examination revealed a moderate cyanosis of the vaginal mucous membrane, a small amount of mucoid discharge from the cervix; the fundus was in second degree retroversion. Marked tenderness was noted throughout the pelvis. A tender mass was in the right adnexal region. The left adnexa was indurated. The clinical impression at the time of admission was intra-abdominal hemorrhage from ruptured tubal abscess or tubal pregnancy.

The patient was admitted in shock at 1:00 a. m. Bedside x-ray indicated a paralytic type of ileus rather than

mechanical obstruction. The urine was negative. Hemoglobin was 44 per cent and leukocyte count was 32,000 with 85 per cent p.m.n.s., 14 per cent lymphocytes and 1 per cent monocytes.

Intravenous glucose was administered. At 2:50 a. m. the blood pressure was 106/60. A blood transfusion was started at 3:30 a. m., and 300 c.c. given. At 7:00 a. m., the blood pressure was 80/46. Another transfusion of 600 c.c. was administered by 8:00 a. m.; blood pressure at this time was 80/46. At 11:00 a. m., laparotomy was performed. The peritoneal cavity was "full of blood," but no bleeding point was found. A bilateral salpingectomy was done. The fallopian tubes showed chronic inflammation grossly and microscopically. The patient was given 1,000 c.c. of glucose at 2:45 p. m., and 1,000 c.c. of citrated blood at 4:00 p. m. At 5:00 p. m., 1,000 c.c. of 10 per cent glucose was again given, and at 10:30 p. m. another transfusion of 750 c.c. of citrated blood was given. The blood pressure at this time was 130/80 following a 600 c.c. transfusion at 1:40 a. m. on May 17; pulse 120 and good quality. At 4:30 p. m. of this day, 2,000 c.c. of 5 per cent glucose was given. The patient's condition remained critical. On the evening of May 18, respirations became labored. After a chest examination, a diagnosis of postoperative atelectasis and possible bronchopneumonia was made. She grew progressively weaker and expired at 7:38 p. m. on May 19, 1938.

The pertinent findings at autopsy were: The peritoneal cavity contains about 2,000 c.c. of dark liquid blood. The large and small intestines are distended with fluid and gas. The peritoneum is covered with organizing hemorrhagic fibrinous adhesions.

A search is made for the point of hemorrhage and a large mass of clotted blood is noted in the left subdiaphragmatic region. It extends below the costal margin and almost to the midline on the left. After the sternum and anterior portion of the ribs are removed to give better exposure, the extent of the clot is determined with some difficulty. The gastrosplenic ligament, the tail of the pancreas, the hilus of the spleen with the splenic artery and vein, and the gastric and renal surfaces of the spleen are all identified. The clot fills the entire space between these organs and the diaphragm. The spleen is embedded in the clot. The clot and spleen are removed in entirety. The mass weighs 1,000 grams. The splenic substance is intact. No definite point of bleeding can be identified on the surface of the spleen. Its diaphragmatic surface is covered by an organizing black clot over which is stretched the badly ruptured diaphragmatic portion of the splenic capsule. It is evident that the peritoneal hemorrhage originated from beneath the ruptured splenic capsule. Outside of the capsule is about 700 grams of fresher dark red clot. The spleen when freed from the clot weighs 170 grams.

Other pertinent findings were a small hematoma one centimeter in diameter on the upper surface of the liver, hydrothorax, atelectasis of lung, bronchopneumonia, and an incidental finding of a congenital anomaly, a double ureter of the left kidney.

Microscopic Findings.—"Study of a large number of blocks taken from the spleen yields little to explain the cause of hemorrhage. In only one small section is found an area probably representing a capillary cavernous hemangioma. But even here the findings are not absolutely conclusive."

*Case 2.**—L. H., a young woman, aged twenty-seven, was admitted to the hospital December 6, 1948, and was discharged well on December 21, 1948.

This patient gave a history of sudden onset of sharp abdominal pain on the day previous to admission. Pain was located in the epigastric region, right upper quadrant, and radiated to both lower quadrants and both flanks. She had bilateral shoulder strap pains. Pain was so severe she was unable to sleep that night. Pain was constant in the abdomen, but sharper at times. A physician, called to her home, made a probable diagnosis of appendicitis and recommended hospitalization. She delayed following his advice and entered the hospital the next morning. Pain had eased up somewhat and on admission she complained of a sharp shooting type of pain in the lower abdomen in the mid-line and suprapubic region. Her last menses was three weeks previously. Two days before admission there was slight spotting. There was no nausea or vomiting, but a loss of appetite. There had been two soft bowel movements the day before admission. She had had one pregnancy terminated at eight months due to eclampsia.

Physical findings showed the entire abdomen tender to palpation, most marked in the right lower quandrant and rebound tenderness was elicited throughout the abdomen. The pain was more severe in the lower abdomen. The uterus was described as slightly enlarged and a tender nodule was palpated in the right adnexal region. Hemoglobin on admission was 52 per cent and dropped to 45 within a few hours. White blood count was 10,600 with 72 per cent p.m.n.s.; blood pressure was 118/70. In view of a markedly tender lower abdomen, a tender right adnexal mass, slight cervical bleeding, signs of intraperitoneal hemorrhage with falling hemoglobin, a diagnosis of ruptured ectopic pregnancy was made and immediate operation advised.

At operation the abdomen was found to contain about a liter of blood and several small clots. The entire pelvis was normal. Exploration revealed a large clot about the spleen. The incision was enlarged, the spleen exposed, and a large hematoma was noted on its superior-posterior-lateral aspect. On palpation a large clot was evacuated from the upper pole of the spleen. There was another small subcapsular hemorrhage 2 centimeters in diameter on the anterior surface of the spleen. Splenectomy was done. The patient received three units of blood by transfusion during the operation.

Her postoperative course was uncomplicated and she was discharged on her fourteenth postoperative day.

Pathological Reports.—Specimen consists of spleen weighing 186 grams after formalin fixation. Covering a large portion of the anterior-lateral surface is a large subcapsular hematoma measuring up to 15 millimeters in thickness. The capsule over this shows irregular jagged lacerations. There are a number of sharply circumscribed, rounded dark purple nodules varying in size from a few millimeters to a few centimeters and extending deep into the pulp of the spleen.

Microscopic.— Sections of spleen show large areas of hemorrhage within the parenchyma. There is no intrinsic pathology in the pulp or malpighian bodies except for this hemorrhage. There is no evidence of tumor formation or angioma.

Diagnosis: Splenic rupture with intrasplenic hemorrhage.

Case 3.—This twenty-two-year-old woman was admitted to the hospital August 3, 1948, and was discharged August 21, 1948. She had been married for three weeks. Her last menses occurred July 15, 1948. She gave a history of experiencing sharp pain in the right lower quadrant during intercourse. Shortly afterward she developed abdominal cramps in the left lower quadrant. The cramps gradually improved. About six hours after coitus her cramps reappeared. She fainted. Her abdominal pains continued unabated. She became nauseated, vomited, was nervous and apprehensive. A family physician saw her, found a blood pressure of 60/0, advised hospitalization for "internal hemorrhage."

Physical findings on admission were temperature 98° F., blood pressure 96/68, pulse 84 full and regular. She appeared pale but was not in shock. Pelvic findings were a normal vaginal mucous membrane, firm cervix, closed, no bleeding or discharge. Corpus normal in size,

*Postscript case.

in mid-position and slightly tender. Right adnexa was negative. There was left adnexal tenderness but no mass. She was observed for two days. The hemoglobin dropped from 65 per cent on admission to 49 per cent in 48 hours; white blood count was 14,400 on admission with 82 p.m.n.s.

Operation was advised on August 5, 1948, under a tentative diagnosis of: (1) Ruptured ectopic pregnancy; (2) Ruptured follicle or luteal cyst.

Operation.—The abdomen contained about 800 c.c. of clots and dark liquid blood. The blood was removed and the pelvis was found normal. Further exploration showed the spleen, liver, pancreas, stomach, and kidneys normal. In the right renal gutter at about the level of the hepatic flexure, a large retroperitoneal hematoma was found and there was an ooze through the stretched peritoneal surface at this point. The hematoma was not evacuated. Oxycel was placed over the oozing area. The patient received 2 units of blood previous to and during operation.

She made an uneventful recovery and was discharged on her sixteenth postoperative day.

Discussion

Three case reports of rare types of intraperitoneal bleeding have been presented. The first patient with ruptured spleen may have had a rupture resulting from a hemangioma, although the pathologist does not indicate certainty. The gross description of the second spleen sounds like hemangioma, but the microscopic picture does not verify this diagnosis. Subsequent to operation in searching for a history of trauma, the second patient stated she was rough-housing with an eight-year old boy relative, but remembers experiencing no injury.

The third patient with retroperitoneal hemorrhage and subsequent intraperitoneal leakage may have had a varix rupture during the act of coitus. There was no obtainable history of any other trauma.

The operator's failure to explore the upper abdomen in Case 1 was due to an interpretation that the "bleeding was coming from the fimbriated extremities of the tubes," and "in view of the patient's critical condition." This error of omission resulted in a fatal outcome.

Summary

1. Many of the common and rare causes of hemoperitoneum are discussed.

2. Spontaneous rupture of the spleen in infectious mononucleosis may occur more frequently than has been suspected.

3. Rupture of the malarial spleen is discussed. It is noteworthy in the reported series that rupture incidence is much higher in patients inoculated with malaria than in those with naturally acquired malaria.

4. Two patients with ruptured spleen operated under the mistaken diagnosis of ruptured ectopic pregnancy are reported.

5. A case of retroperitoneal hematoma with intraperitoneal spilling is reported. The cause is unknown but probably was due to a ruptured varix during coitus.

6. A thorough painstaking exploration is always imperative when the usual sources of intraperitoneal bleeding are not found.

Dr. H. M. N. Wynne, Minneapolis, read his Inaugural Thesis on "Torsion of the Fallopian Tube."

Abstract

A presentation was made of three cases of torsion of the fallopian tube without involvement of the ovary. Slides of drawings and photographs of the specimens were shown. Pertinent literature on the subject was reviewed with a discussion of the symptoms, signs and differential diagnosis of the condition. The conclusion was drawn that a positive diagnosis of torsion of the fallopian tube without involvement of the ovary was extremely unlikely.

The meeting was adjourned.

A. E. Cardle, M.D., *Secretary*

Meeting of December 8, 1948

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, December 8, 1948. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 p. m. by the President, Dr. T. A. Peppard.

There were fifty-one members and one guest present.

Minutes of the November meeting were read and approved.

The following were elected as officers for 1949:

President, Dr. J. A. Lepak, Saint Paul.
Vice-president, Dr. William Hanson, Minneapolis.
Secretary-treasurer, Dr. A. E. Cardle, re-elected.

Dr. S. Marx White, Minneapolis, read the following memorial to Dr. J. C. Litzenberg.

JENNINGS CRAWFORD LITZENBERG
1870-1948

Jennings Crawford Litzenberg was born in Waubeck, Iowa, April 6, 1870. His paternal ancestors came from Germany in 1700. On his mother's side in the Crawford line coming from Scotland in 1730, were physicians in Cedar Rapids, Iowa, who undoubtedly influenced him much in the choice of his career. When he was six the family moved to Anamosa, Iowa, and when he was twenty, i.e., in 1890, his mother, then widowed, moved to Minneapolis.

Matriculated in the fall of that year in the University of Minnesota, his connection with and profound interest in that great institution covered a period of fifty-eight years, lasting to his dying day.

There was an interim of one year which he spent as Superintendent of Schools in St. Louis Park, but im-

mediately thereafter posts as Educational Director of Evening Schools of the Minneapolis Y.M.C.A. and employment by Dr. L. J. Cooke, Physical Director at the University of Minnesota, enabled him to enter the medical school from which he graduated in 1899. A year's internship in the Minneapolis General Hospital served as a foundation for general practice in Medicine.

Many months of study in Vienna in 1909-10 prepared him for specialization in Obstetrics and Gynecology and on his return he limited his work to that field. He was appointed Professor of Obstetrics and Gynecology and head of that department in 1914. Immediately thereupon he took a period of study and observation of many months in Vienna, Berlin, Glasgow and Dublin.

He retired from active participation in teaching in 1938 with the title of Professor Emeritus. He was a strong protagonist for the essential organic unity of the two fields represented in the title of his department. Responsibilities and honors came to him in profusion. He was elected president of the Hennepin County Medical Society in 1919 and of the Minnesota Academy of Medicine in 1932. He always considered these honors by men who knew him best as a source of greater satisfaction than the national honors that came to him.

He was elected chairman of the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association in 1928; president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons in 1933, and of the Central Association of Obstetricians and Gynecologists in 1939, and of the American Gynecological Society in 1940.

He was for ten years, 1930 to 1940, a member of the American Board of Certification in Obstetrics and Gynecology.

Litzenberg's great interest was in the saving of the lives of mother and child, and his teaching of undergraduates and graduate medical students reflected his interest. In addition to the many hundreds of the former graduated during his period of twenty-four years as chief of his department, about a dozen men received their special training and earned the Ph.D. degree under his direction.

His researches included the relation between low basal metabolism and infertility, the leukocytes in pregnancy, tubal pregnancy, and pregnancy in the tuberculous. Conservation of the child-bearing function was a major interest with him. He illustrated in striking fashion the dictum so often voiced by the late Dr. James E. Moore, "The true conservative is one who knows when to be radical."

This was manifest in his attitude toward heart disease in pregnancy. The writer of this sketch well remembers an occasion in about 1920 at the University Hospital. He was asked by Litzenberg to see four women in the obstetric wards who were presumed to have heart disease and the obstetrician wished to know if any of the quartette could be carried to term with safety. Older members of the Academy will remember the readiness with which at this period abortion was recommended in the presence of heart disease even though often minor in degree. As a result of the study then made, the opinion was recorded that three of the four, with proper management, could probably be carried through. This seemed to delight our friend. The outcome justified the attempt, and from that time on close co-operation between the obstetrician and the cardiologist has resulted in the saving of many hundred infant lives.

His "Synopsis of Obstetrics" was published in 1940, and translated into Spanish by Professor De Los Reyes in 1941. A second edition appeared in 1943.

He has been given the major credit by his colleagues in obstetrics for the remarkable reduction of maternal mortality recorded in this area beginning with 1920. In that year about 15,000 women died in the nation as a consequence of child bearing. The national and Minnesota rates were about seven deaths for every one thousand live births. When Litzenberg retired in 1938 Minnesota had the lowest maternal mortality rate in the nation. In 1947 Minnesota can boast of a record of 0.6 maternal deaths per one thousand live births. Dr. Ehrenberg, one of his specialty students and a colleague, states that this is the lowest ever recorded in the country, if not in the world.

Characteristic of Litzenberg's spirit, however, is a disclaimer in a brief autobiographic note which reads:

"I have been given too much personal credit for the improved teaching of obstetrics and gynecology in our Medical School. My staff deserves most of the credit for all members were in accord in a determined joint effort to improve the teaching so that all graduates would be constantly conscious of the dangers of child bearing and their duty to reduce them, i.e., the 'philosophy of conservative obstetrics.'"

During Litzenberg's incumbency his department in the Medical School did not require full time and he had his private practice first with a small staff of associates in his specialty. In 1921 he joined a group of men who for the most part held part-time teaching positions in the Medical School, to form the Nicollet Clinic for group practice. From this connection he retired December 31, 1947, and then only when ill health overtook him.

He was much sought in consultation and always spent freely his time and wise counsel.

He was for many years a Trustee of the First Baptist Church of Minneapolis.

A fine oil portrait of "Litz" by Edward Brewer was presented to the University by about two hundred and fifty of his colleagues at the time of his retirement from the University in 1938. It hangs in his former department.

Words by those of us who knew and loved him might be extravagant. Two evaluations by University Presidents under whom he served will not be so considered.

George Edgar Vincent wrote:

"I think of you with pleasure and gratitude. You were always calm, wise, humorous, and a steadying influence. You had ideals of research, teaching and organization to which you were quietly but steadfastly loyal. In times of stress and strain you kept your head and your temper. You will carry with you the assurance that you have played an important part in making the University of Minnesota Medical School one of the best in the country."

Lotus D. Coffman wrote:

"In recognition of your long and distinguished service the President and Board of Regents express their gratitude, esteem and affection. Your name is already on the roll of honor of those who have contributed to the development of a great University. You have served the University notably and well. Your tolerant optimism and intelligent devotion to your work have increased your usefulness far more than you ever suspected.

You have done a good job."

Dr. Litzenberg died August 15, 1948, after two hours' acute illness, of coronary occlusion.

A colleague in his specialty has written: "The Chief is gone! To us who sat at his feet there can be no other Chief. He lighted a torch which we have striven to carry. He personified a great spirit and growth in obstetrics and gynecology. Through the medium of his own idealism he represented an ideal. He was Litzenberg—jocularly translated from German into English by himself, 'A light in the mountains.' A bright light on a lofty height." S. Marx White

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Dr. E. V. Goltz, Saint Paul, read the following Memorial to Dr. Alfred Hoff.

ALFRED HOFF
1883-1948

Dr. Alfred Hoff died suddenly October 9, 1948, at his home following an illness of several months.

He was born March 9, 1883, in St. Paul. He received his preliminary education in the schools of Saint Paul and was graduated from Cleveland High School in 1901. After working in the auditing department of the Northern Pacific Railroad for a time, he enrolled in the University of Minnesota, receiving his Bachelor of Science degree in 1908 and his Doctor of Medicine in 1910. He was a member of the Nu Sigma Nu fraternity and was elected to the Sigma Xi and Alpha Omega Alpha honorary fraternities.

Dr. Hoff served his internship at the City & County Hospital in 1910-1911 and continued his connection with this hospital in various capacities, chief of staff and at the time of his death he was chief of the medical section. In 1926, he took postgraduate work at the University of Vienna. On his return to St. Paul he confined his practice to Internal Medicine.

Dr. Hoff served as Chief of Staff of St. Luke's Hospital and was a member of the Board of Directors of this hospital.

Dr. Hoff was a Fellow of the American College of Physicians, certified by the American Board of Internal Medicine, also a member of the Ramsey County Medical Society, the Minnesota State Medical Association and the American Medical Association. He was a member of the Minnesota Society of Internal Medicine and the Minnesota Academy of Medicine. He became a member of this Academy in 1935.

Dr. Hoff was married December 1, 1926, to Miss Marjorie Monkhouse. He is survived by his wife, son John and daughter Mary Patricia; also by two sisters and one brother.

Dr. Hoff was an ardent student in many phases of medicine. He devoted considerable time to the training of the intern staff and nurses at the Ancker and St. Luke's hospitals. He was held in respect and esteem by his associates for his professional ability and integrity.

The Committee
C. K. Williams
E. V. Goltz

The scientific program followed.

PRE-FRONTAL LOBOTOMY IN EIGHTY CASES

H. B. HANNAH, M.D.
Minneapolis, Minnesota

Therapy has always been a very intriguing subject in the practice of medicine and in more recent years in the practice of psychiatry. This evening I am going to call your attention to the various procedures in therapy which have occurred during the past thirty years.

In 1919 I went to work as a technician in a fairly large eastern sanitarium. We had about two hundred patients and each patient had a private room. The buildings were well constructed and well furnished; the grounds were beautiful and the food was excellent. There were four well trained psychiatrists and three consultants who came every day. Rounds were made twice a day and a staff conference was held once a week. An attempt was made to make a differential diagnosis as to the type of psychosis and a prognosis was given to the family. The treatment consisted of good nursing care, looking after the elimination, good food, sedatives, outdoor exercise, if possible, and hydrotherapy, if the patient was excited. Also, every effort was made to prevent the patient from injuring another patient or from injuring himself. The only specific therapy that I could see at that time was the use of chemicals in the treatment of syphilis.

In the early 1920's Wagner von Jauregg introduced fever therapy in the treatment of paresis. It was claimed at that time that early cases of paresis would be greatly benefited by fever therapy even after the onset of the symptoms and that better than one out of three went into a remission. As you know, fever therapy has continued to be used not only in the treatment of paresis and central nervous system lues, but also as a preventive measure.

Also, during the 1920's psychoanalysis began to be very popular and this was particularly true along the Atlantic seaboard. Of course, it has its greatest value in the treatment of the so-called psychoneurotic group or the so-called nervous tension state. A physician cannot become a psychoanalyst unless he has himself been analyzed and is free of his own hidden emotional conflicts. Psychoanalysis is a long tedious procedure and the average citizen does not have the time or the money to be subjected to this procedure. The period of time is anywhere from six months to eighteen months. As one of my colleagues once said, it seems to never end.

In 1928, at a meeting of a neuropsychiatric association at Madison, a patient with catatonic dementia praecox

was stimulated with carbon dioxide or was permitted to inhale an excess of carbon dioxide and then got up from his chair, walked around, opened his eyes, and answered questions. However, this only lasted for a short period and then he went back into his catatonic stupor. Several other similar experiments were being conducted at Madison with other cases of catatonic schizophrenia.

In 1935, Manfred Sakel released his first work on the treatment of functional psychoses with insulin shock. He reported a very high percentage of recovery in Manic depressive, schizophrenic and involutional psychoses. The psychiatric world was electrified and everyone began to use insulin shock therapy. However, clinical workers in this country and abroad could not duplicate the wonderful results reported by Sakel in the treatment of schizophrenia. However, this stimulated thinking from the standpoint of the organic approach to the treatment of the psychoses of the so-called functional type.

A couple of years later, Meduna reported his series of cases treated with the camphor derivative of metrazol. Metrazol was rapidly injected into the veins and the patient had a severe convulsion. There was much controversy as to whether metrazol was of any greater value than insulin shock therapy. The convulsions with metrazol were so severe that many fractures and dislocations occurred. There is no doubt that the length of time of recovery in the depressions and in the manic attacks was greatly reduced. Also, the patient with acute schizophrenic episodes did much better as far as remissions are concerned with a combination of metrazol and insulin shock therapy.

It was in 1938 or 1939 that two Italians, Beni and Cerletti, released their work on physical shock therapy by means of electricity. The results obtained with electric convulsive shock therapy have been gone over many times in literature and I am not going to spend any further time with this subject this evening.

In 1936 Egas Monas first reported the technique used and the results obtained in twenty cases of prefrontal lobotomy. Since that time there have been a large number of reports by neuropsychiatrists and neurosurgeons in this country as to the results which they have obtained.

Freeman and Watts, of Washington, D. C., have pioneered the operation of prefrontal lobotomy for mental abnormalities and have been very enthusiastic over their results. Magnus Peterson, of the Rochester State Hospital, in Minnesota, has also been very active in this field.

One of the most extensive reports was in 1947 from London, in which 1000 cases of prefrontal lobotomy were studied. The patients were all in mental hospitals and had been there from one year up to twenty years. Thirty-five per cent of the patients were discharged as recovered or improved; 32 per cent remained at the hospital as improved, 25 per cent remained in the hospital unchanged, and 1 per cent was worse following the operation. Death followed 5 per cent of the cases treated. Hemorrhage was the chief cause of death. Fits were reported in 3 per cent following operation but most of these had but one fit. In this series 60 per cent of the total treated were in the schizophrenic group and 23 per cent of this group were discharged as recovered or improved. The manic depressive group accounted for 25 per cent of the cases, and 50 per cent of this group recovered. Patients whose attacks had persisted for less than two years formed one-fifth of the patients treated and the discharge as to recovered or improved in this group was 58 per cent.

Social behavior was studied in 958 patients after surgery. Of these 244 were as before; 295 were milder; 165 were co-operative; 244 were living as citizens from the industrial and social standpoint, and eleven were worse.

An analysis of certain symptoms also was made. Delusions were gone in forty-six per cent of the patients. The hallucinations were definitely less in 30 per cent. It was very significant that the depression had disappeared in 83 per cent. Eighty-seven per cent had lost their agitation. In 57 per cent the excitement had disappeared or become less. Approximately 70 per cent had lost their obsessions.

Within the last three years we have had prefrontal lobotomies performed in eighty of our patients. Forty-two per cent of these were in the schizophrenic group, and approximately 75 per cent of the schizophrenics were of the paranoid type. These patients had been ill from one to eight years. Thirty-eight per cent were in the psychoneurotic group who suffered from obsessive compulsions. Eighteen per cent were suffering from depressions which had not recovered over a period of years. We had one patient with a chronic maniacal type of reaction and one patient with intractable pain from a carcinoma of the prostate which had metastacized into the spine. This last patient got no relief from his pain from the lobotomy operation.

In our series, we have not had any deaths. Most of the patients are up out of bed within twenty-four hours, and all of them have been up and around within seventy-two hours. The only complaint on the part of the patient has been of some headache or dizziness for a couple of days. A few of the patients have had some vomiting for twenty-four hours. We have not had any hemorrhages or any infection.

It is always difficult in this type of work to accurately evaluate the improvement average. If a patient can make a satisfactory economic, or what might be called an industrial and social adjustment, and get along without help of an institution or medical attention, then I feel that this individual has made satisfactory improvement or recovery. Such improvement has occurred in at least 75 per cent of our patients up to this time. I know you will be interested in what happens to the patients who have not improved. The chief symptoms seem to be lack of ambition, slowness, inertia, lack of desire or urge to work, and a willingness to sit around and do nothing. There is no deterioration in the intellectual level and most of the relatives describe the situation as one of laziness. Also, some of these patients become very irritable and cross if they are urged to extend themselves or look after themselves or do any work. It is difficult for me to understand why we get poor results in some of these cases.

I feel that we can draw the following conclusions at the present time:

1. Prefrontal lobotomy has been a rather simple operation as far as the patient is concerned. Ninety per cent of the patients have been able to get out of bed the day following the operation and, outside of a mild to moderate headache for a couple of days, they have had no other physical complaints. Complications are certainly rather infrequent and we have had no deaths so far in our series. Of those patients who made an eventual substantial recovery, 50 per cent were very slow and showed lack of initiative and had no urge to do things from several weeks up to several months. However, this slowness and lack of initiative gradually disappeared in all except 25 per cent of our patients.

2. Remarkable improvement in behavior has followed in all of our patients. This has been particularly true in the paranoid group. This improvement in behavior followed immediately after the surgery.

3. We are frequently asked the question as to what the result will be in ten to twenty years from now. Will there be a loss of some of the finer mental qualities? Up to the present time, we have not seen any intellectual deterioration but further study and observation for a period of years will certainly enlighten us further.

4. We do not feel that this operation should be carried out without careful consideration of each individual patient by experienced physicians who have had training and are experienced in the field of psychiatric medicine.

(Dr. Hannah presented two patients who had made a recovery.)

Discussion

Dr. W. H. Hengstler, Saint Paul: I want to express my personal appreciation to Dr. Hannah for his paper. I think it was very fine. My own experience in recommending lobotomy has been more limited. Dr. Ritchie has done some for us. The chief thing about it is that it now offers us something beyond shock therapy. We have been blocked off after we had given psychotic patients a certain amount of psychiatric care. Lobotomy offers these people something to hope for after some time. It also offers the State something, in that such a high percentage of patients who have lobotomy operations are able to leave the institutions and go back home at least, if not amenable to economic and social adjustment. The public gets the idea that everybody should have a lobotomy and get well. I think that is the danger as it is in any treatment which is not as yet completely standardized. I think Dr. Hannah's cases have proved that this is something which is very beneficial, and in the future we shall be able to establish certain standards by which we can go. They must be cases that have been psychotic for an extended period of time—three to five years—before lobotomy is attempted as a last procedure. I do believe that, as Dr. Hannah says, the family should be advised to have this operation done, assuming that all other methods have failed.

Dr. Wallace P. Ritchie, Saint Paul: The results that Dr. Hannah and Dr. Buchstein have had are certainly excellent and one could ask for no finer results than the two cases that were shown this evening.

We are really indebted to the two chimpanzees, Lucy and Becky, for the development of prefrontal lobotomy. These chimpanzees were used by Dr. John Fulton and his co-workers at Yale University and it was found that they were exceedingly excitable during their testing and at one time they became so irritable because they could not perform certain tests it was feared they might have nervous breakdowns if the examining was carried further. Prefrontal lobotomies were done on both these chimpanzees and, following this, they became much more amenable to testing. They strove to carry out their tests, but if they missed one they did not seem to be bothered by it.

Mechanically, the prefrontal lobotomy is not difficult: it is merely sectioning some of the white fibres from the frontal lobes which go to the thalamus.

In the selection of patients, the utmost care must, of course, be used. Usually in the psychotic patient, who has had years of treatment without avail, there is no question about the advisability. It is in the severe psychoneurotic patients that the extreme care must be taken, as, in my experience, patients are somewhat superficial in their attitude toward their life following the procedure. It is, therefore, truly an operation of last resort, in my opinion, and should never be done unless all other treatment has failed and life is unbearable for the patient.

Dr. E. M. Hammes, Saint Paul: Dr. Hannah has so fully covered the subject that there is very little to add. However, I feel it might be of interest to add how insulin and metrazol shock treatments came about. In the course of treating drug addicts and alcoholics, Sakel observed that, if he gave them moderately large doses of insulin also, the nervous manifestations were less pronounced. From this he reasoned that perhaps he might get some beneficial results with the use of insulin in psychotic patients. Fortunately, his first few patients responded satisfactorily. Meduna noted what is generally known, that epileptics very seldom suffer from a somatic psychosis. Because of that, he reasoned that perhaps the somatic psychosis would respond satisfactorily to convulsions produced by drugs. He first began to use metrazol and had satisfactory results. It was later found that the convulsions with metrazol were very severe and patients developed undue emotional reactions and fears. Gradually convulsions were produced in these patients by use of electric shocks. Judging from a fairly large experience with these treatments, we feel definitely that the percentage of recoveries is greater and the period of hospitalization is shortened. The most important question, however, is—How permanent are these results? Unfortunately the recurrence in these psychoses with the various forms of shock treatments is about as frequent as it was before they were used. The addition of psychosurgery to the therapeutic armamentarium has been another additional and very important help. We have had some very nice results in cases associated with noticeable depression, also a considerable amelioration in some of our chronic schizophrenics whose outstanding symptoms were vicious and destructive tendencies.

The meeting adjourned.

A. E. Cardle, M.D., *Secretary*

Minneapolis Surgical Society

Meeting of November 4, 1948

Carl O. Rice, M.D., Presiding

NON-OPERATIVE DECOMPRESSION OF THE INTESTINAL DISTENTION OF BOWEL OBSTRUCTION AND RELATED DISEASES

(Abstract)

J. H. STRICKLER, M.D.
Minneapolis, Minnesota

Most surgeons agree that severe or prolonged adynamic ileus is best treated by long intestinal intubation and suction. However, the treatment of acute mechanical obstruction is a subject on which some difference of opinion exists as to whether operation should be performed at once or after preliminary intubation and decompression has failed to relieve the obstruction. All agree that even a reasonable suspicion of strangulation of bowel is an acute surgical emergency.

Particularly in the present era of safe surgery and low risk of anesthesia—a prolonged period of decompression is undesirable whether the obstruction is to be treated by suction alone or as preparation for operation. Since the mortality from obstruction rises after a period of twenty-four hours and is especially high after seventy-two hours, the success of intubation treatment depends upon the rapidity with which it can be instituted. Such methods as inserting the tube blindly and waiting for passage, or waiting twelve to twenty-four hours before employing fluoroscopic aid, must be considered as only adding to the mortality and morbidity rates. One must establish an arbitrary short trial period after which, if intubation has not been successful, it should be abandoned. In this series 44 per cent of the cases of obstruction were intubated in thirty minutes or less and little further was accomplished after one hour. Therefore a trial period of one to two hours should be adequate. By adhering to such a policy and by the use of the technique and tube to be described, intubation treatment should still have an important place in the treatment of bowel obstructions. The patient can be evaluated more carefully and the surgical risk lessened by restoring physiological balance by means of decompression.

Reports on the general use of the Miller-Abbott tube indicate that failures and slow pylorus passage rates are discouragingly common. It is with such facts in mind that a search was made for an improved tube and a more reliable technique so that the long tube decompression would still have its proper place in the treatment of bowel distention and the employment of intubation would then improve the results. Wangensteen warns that the practice and employment of suction as a test procedure to indicate whether operation will be necessary leads only to a deferment of appropriate treatment.

Dr. Strickler is a Fellow, Department of Surgery, University of Minnesota Medical School (by invitation).

In 1944 John Wild of England published a description of a plastic tube with mercury-containing gravity director head and a bolus balloon. In an early series of twenty successive cases, without the aid of fluoroscopic guidance, Wild achieved an average passage time of 57.2 minutes for the tube to reach the second portion of the duodenum as confirmed by x-ray plates. Since that time the tube design and passage technique have become standardized. This technique and an evaluation of clinical results in 100 consecutive intubations on all types of intestinal distention will be presented here.

All intubations should be done with the aid of fluoroscopic manipulation and observation. Prior emptying of the stomach by suction will save time during passage of the long tube. The full, decompensated stomach associated with intestinal distention will then have had an opportunity to regain tone and motility essential to passage of the tube through the pylorus.

Duodenal Catheterization

Standard technique for the passage of Wild tube or other types of long intestinal tubes with a mercury gravity director head and balloon bolus with fluoroscopic aid:

1. Two per cent Pontocaine solution is applied to the nose.
2. With the patient lying flat on his back, place balloon of the tube at the tip of the xiphoid and measure the distance to the nostril. Place a tape marker on the tube at this point.
3. Stuff lubricant into the nostril and lubricate the mercury sack and balloon.
4. Milk the mercury sack into the nostril with the thumb and forefinger until all of the balloon has entered nostril.
5. Place the patient in the sitting position, leaning to the left, resting on the outstretched left arm.
6. Guide, do not push, the tube into the nostril as patient swallows it. Sips of tepid or warm water may be used if desired. Stop as tape marker reaches the nostril.
7. Inject air (usually 500 c.c.) into the stomach through the suction tube by means of a syringe. If the patient belches or complains of epigastric pain, stop at that point. In the presence of severe distention or cascading, 800 to 1000 c.c. of water may be needed to negotiate crossing of the stomach.
8. Place the patient on the right side, in about the half prone position.
9. Pass the tube 8 to 10 inches farther. This places the tip at the pylorus with enough slack to enter the duodenum.
10. Wait ten minutes and check by fluoroscopy.
11. If the tip is in the first portion of the duodenum, tilt the fluoroscopic table to 45 degrees, feet down; check each minute or two by a brief glance, until the tip is in the lower part of the second portion of the duodenum. Then insert 10 c.c. of air into the balloon.
12. Turn the patient to the left with fluoroscopic table flat until the tip passes the ligament of Treitz.



Fig. 1. Demonstrating the proper amount of slack tube in the stomach. Although the gravity director head is in the second portion of the duodenum, the bolus balloon is not far enough advanced to be inflated without fear of pulling the tube back into the stomach. Number 1 is placed to the right of the small metal insert in the end of the airway tube at the point of attachment to the bolus balloon. Number 2 is to the right of the metal sleeve which supports the bilaterally placed holes in the Koroseal suction tube. Number 3 is mercury within the closed gravity director head sack.

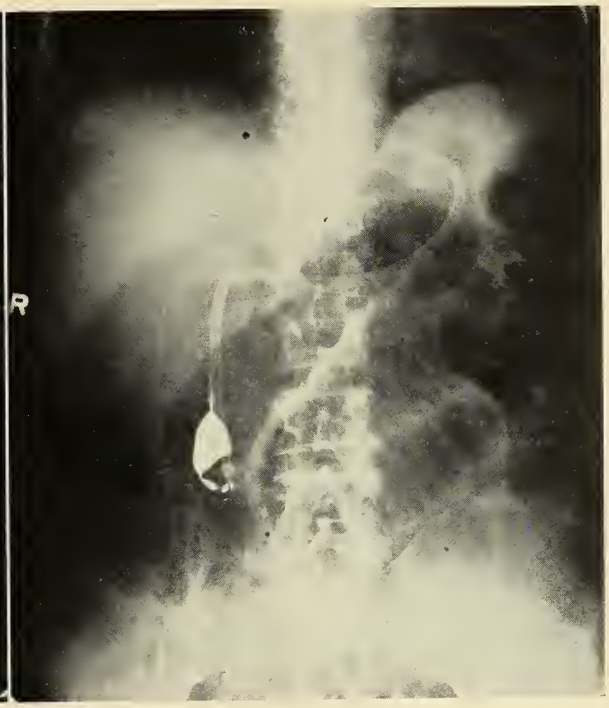


Fig. 2. The tip of this tube is low in the second portion of the duodenum. At this point the bolus balloon may be inflated with 10 c.c. of air and the patient turned on the left side. Although it is desirable to have the tube beyond the ligament of Treitz before discontinuing fluoroscopic manipulation, this position assures one that the intubation is successful and that decompression will begin.

13. When the balloon has passed the ligament of Treitz, withdraw air and refill to a total of 20 c.c. of air.
14. Check with Bucky film to make certain of position.
15. Return patient to bed and write orders to have tube advanced four inches each hour. Ascertain proper functioning of suction.
16. Check position at least once daily to be sure that the tube is not arrested over twenty-four hours in one position.
17. When the tip of the tube ceases to travel or the desired distance has been achieved, deflate the balloon.
18. Obtain check films each three to four days and inspect mercury sack for signs of distention from infusion of gas into the sack.

For Passage in Bed.

1. After the tip has been passed to the pylorus, elevate the foot of the bed to an angle of 45 degrees for half an hour. This accommodates for a saccular stomach and/or a high duodenal cap.
2. Then raise the head of the bed on two-foot shock blocks, or crank the head of the bed to 45 degrees for a half hour. Get check film and proceed as previously outlined.

For Passage in Gastric Resection Cases

1. After passage through the nose, keep the patient in the sitting position, leaning far to the left, until the tip of the tube has passed 12 to 18 inches beyond the xiphoid.
2. Do not use air in recently operated patients.
3. In the seriously ill, pass the tube with the patient lying on the left side with the head of the bed elevated.
4. Get a check film. If the tip of the tube passes to the left lateral wall and down near the iliac crest, inflate the balloon with 20 c.c. of air and have the tube advanced four inches each hour as in other cases.

Additional General Comments

If after five to ten minutes of fluoroscopic observation the tube has failed to pass the pylorus, put the patient to bed on the right side. Three to 5 c.c. of air in the balloon may help its passage. Recheck with films at intervals, depending upon the urgency of the case. Passage is usually accomplished in three to six hours.

Do not sedate the patient prior to passage.

In very old, weakened, or overly sedated patients, it is best to pass the tube into the esophagus with the patient flat on the back.

If the plastic tube is not sufficiently well visualized under fluoroscopy and the question of looping or knotting arises, 25 c.c. of thin barium may be put in under fluoroscopic vision until the barium column arrives at the tip of the tube. The barium should be withdrawn before sending the patient to bed.

Before giving up fluoroscopic trial the patient should be placed on the abdomen for five to ten minutes, head down about 20 degrees for five to ten minutes. Check the position of slack tube in the stomach, leaving only enough to follow the greater curvature.

If the tube fails to pass out of the fundus and extreme distention is present, a gastric balloon may be necessary to force the tip of the tube to the pylorus.

During air injection, if the patient belches on 50 c.c. of air, the tip is either in the esophagus or in a greatly compressed stomach. In such an instance, a gastric balloon likely will be needed.

In adynamic ileus, when the tube has entered the duodenum, a gastric suction tube should be inserted through

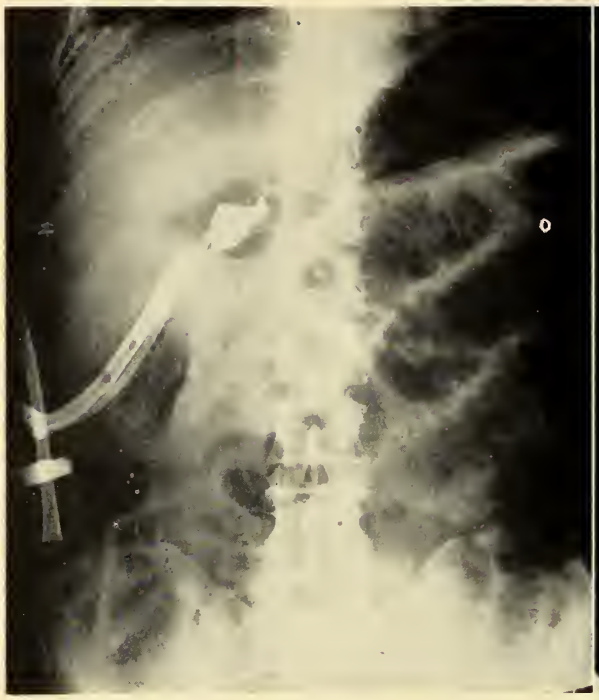


Fig. 3. Air injection technique. The tip of the tube is probably within the antrum. The two tubes on the right are air vent drainage tubes.

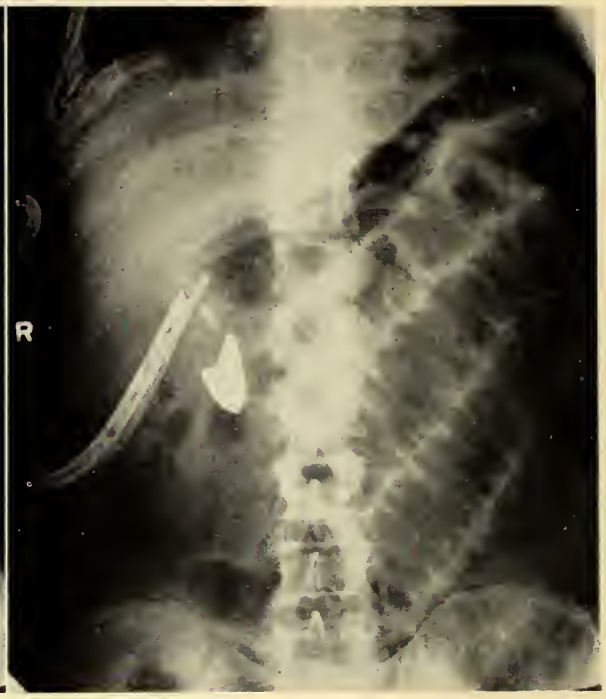


Fig. 4. The tube has passed through the pylorus, through the bulb, and now lies in the upper second portion of the duodenum. The time interval between films was one hour.

the other nostril into the stomach to prevent redistention above the advancing tube.

In a patient with active peristalsis the tube should never be taped to the nose when the balloon is inflated, for the sawing motion caused by peristalsis tugging on an anchored tube may cause esophageal erosion at the level of the cricoid cartilage and consequently a laryngeal inflammation and stenosis.

A word of caution should be added regarding the insertion of mineral oil down the tube. Oil will damage the latex rubber gravity head and balloon and the mercury sack may rupture as it is pulled out of the nostril. Aspiration of mercury is the only serious complication from breakage of the gravity head.

If one is uncertain as to whether the tube is in the stomach or third position of the duodenum, thin barium can be injected under fluoroscopic vision. Ten to 15 c.c. is usually sufficient to demonstrate valvulae conniventes.

In this series of 100 cases, forty-one were instances of acute obstructions on admission to the hospital, forty-three were intubated for postoperative distention, eight for adynamic ileus not related to prior operation and eight for prophylaxis prior to resection and anastomosis of non-obstructing colonic lesions.

In thirty minutes or less, the tube tip was placed low in the second portion of the duodenum in 44 per cent of patients with acute obstruction, 30 per cent of those with post-operative distention and 47 per cent of those with a gastroenteric stoma. As compared to Beverley Smith's series of 1,000 cases of Miller-Abbott intubations, this series has a 50 per cent successful passage rate in the period up to three hours of trial, whereas Smith reports 9 per cent.

Of the 18 per cent failures in this series all but 5 per cent were due to impossible situations such as mechanical obstruction at the pylorus due to carcinoma or ulcer, postoperative vagotomy, decompensated stomach and pylorospasm, mesenteric thrombosis, bile peritonitis in severe biochemical imbalance, and discontinuance of intubation treatment under one hour, or before the position of the tube could be proved by x-ray.

Twenty-two per cent of patients with primary obstruction were treated by suction only, and 81.4 per cent of those with postoperative distention were managed by intubation and suction only. In the obstruction group 73 per cent either had no operation or were operated upon after decompression and hydration had been accomplished.

Decompression was accomplished in less than twelve hours in 42 per cent of patients with cases of acute obstruction but in only 11 per cent of the instances of postoperative distention.

There were two cases of proven, definite and severe generalized peritonitis on whom intubation was successful and decompression was achieved, demonstrating contradiction to the opinion of some authors that suction decompression in such cases is impossible.

After elimination of hospital deaths occurring long after decompression and those due to terminal carcinomatosis unrelated to distention, the mortality rate was found to be 7.3 per cent for obstructions, 12.5 per cent for adynamic ileus not related to prior operation, and 11.6 per cent for postoperative distention of such severity as required long intestinal intubation. The total group mortality was 9.0 per cent.

Wild Tube Advantages

The Wild tube has the following advantages over the conventional Miller-Abbott tube:

The Wild tube is of plastic material, dri-film treated and is less irritating than rubber.

The aspiration lumen is larger and plugs less easily.

The terminal hole distal to the bolus balloon assures suction ahead of the balloon so the tube will not be pushed back by reverse flow. Multiple aspiration holes tend to become plugged distally and suction becomes effective only at some distance behind the balloon.

The mercury gravity director head acts as a leader device.

Air and mercury being in separate compartments assures dependable control of the air in the bolus balloon.

The small size and thick wall of the gravity director head insure against diffusion of a dangerous amount of intestinal gases.

The more tense bolus balloon of smaller air capacity probably affords a stronger stimulus to peristalsis and gives the bowel wall a more firm substance to grip and propel along.

The terminal hole and proximal balloon make possible local barium diagnostic studies, when the tip of the tube meets the obstruction. This type of design also permits the use of air injection to open kinks in the bowel distal to the balloon.

Conclusions

The Wild tube affords more rapid passage and more efficient decompression than has been reported heretofore.

Fluoroscopic guidance, until the tube is beyond the ligament of Treitz, is the most certain means of obtaining dependable treatment.

The air injection technique (500-800 c.c. into stomach) has improved passage across the stomach and has probably aided pyloric passage.

The gastric balloon technique has solved the problem of the markedly compressed stomach.

The tube tip was delivered to the pylorus in ninety-nine of one hundred cases. The intubation was discontinued on one case before the tube had been swallowed.

Redistention above the travelling tube, in the case of adynamia, is treated or prevented by gastric suction through the other nostril.

The tube may be passed the entire distance from nose to ileum during an operation by the combined efforts of anesthetist and surgeon.

The criterion of successful small bowel catheterization must be roentgen evidence that the tip of the tube is in the second portion of the duodenum.

Narcotic sedation prior to intubation very likely interferes with pylorus passage.

Mechanical obstruction at the pylorus, and a post-vagotony decompensated stomach are the only consistent causes of failure to pass the pylorus in this series.

Decompression in inhibitory ileus and postoperative distention is considerably slower than in primary obstructions but there are patients in this series with severe and definite adynamia who were rapidly intubated.

Patients with a gastroenteric stoma have about the same pass rate and final success as those with a pylorus.

In acute obstructions, of all types, 44 per cent of the cases can be intubated in 30 minutes or less. Therefore an attempt at intubation may well be worth while even in patients who are to be operated on at once.

In this series 73 per cent of those with primary obstructions either had no operation or were operated upon after hydration and decompression.

A corrected mortality of 7.3 per cent for primary obstructions of all types, and 11.6 per cent for postoperative distention was observed in this group of 100 consecutive intubations.

Discussion by Dr. John J. Wild

Long Intestinal Tube Design

So far no entirely satisfactory long intestinal tube has been produced commercially. In 1942, finding the existing so-called Miller-Abbott tubes unsatisfactory in England, I decided to try to improve them and have been working almost exclusively on the problem since then.

It has not been possible to get satisfactory co-operation from commercial interests, so methods of fabrication in the laboratory of experimental designs of long intestinal tubes have been developed. In this way it has been possible to test designs quickly and efficiently with the result that an almost completely satisfactory clinically tested tube has been developed. This tube, together with a simple technique which has been developed, has resulted in a decided advance in the use of long intestinal tubes in the direction of rapid introduction in practically all types of cases. Ease and simplicity of introduction is increased and worry and detailed nursing care of the patient are reduced.

The present design consists of a nine-foot tube of adequate suction lumen made of a non-irritating plastic material. Freedom from kinking and twisting is assured by adequate thickness of the wall.

The design of the aspiration orifices represents a considerable advance. Such orifices are placed at the tip of the tube, are two in number, and obstruction from twisting or acute bending is prevented by a metal insert held in place by the binding of the intestinal balloon and of the gravity director head.

An inflatable bolus of special design is attached just proximal to the aspiration holes. This bolus is inflated by a separate plastic tube which will ultimately be attached to the main suction tube in such a way as to avoid costly metal connecting pieces.

The bolus has a primary inflation capacity of 5 c.c. and can be increased subsequently to 10 c.c. and then to 20 c.c. after the duodenum has been passed.

The 20 c.c. distention is used for intestinal travel. The balloon is distended spherically under pressure so that a very rigid bolus is formed which makes for easy handling of the tube during operations where it is desired to decompress the distended bowel. Fifty c.c. distention under pressure effectively seals the bowel proximal to the aspiration holes so that radiopaque media can be injected distally into the lumen of the bowel. Air also can be injected distally into the bowel for the purpose of removing kinks due to postoperative adhesions.

The gravity director head is a carefully designed sack of rubber partially filled with 2.5 c.c. of mercury. The head can be introduced easily into the nose without instruments and is of such a shape that it will negotiate the lower end of the stomach and pyloric region. Should the sack distend with gas, the size assumed is not sufficient to cause trouble upon removal. The gravity director head is attached to the tip of the tube and pulls the tube end-

Dr. Wild is Research Fellow, National Institute of Health.

wise behind it so that there are no projecting tips to catch at the lower end of the esophagus or pylorus.

This arrangement of intestinal balloon, aspiration holes and gravity director head from above downwards has been found to be the most expedient way of rapidly transversing the gastrointestinal tract in cases of intestinal distention.

With such a tube design it has been found possible to deliver the tip of the tube to the pylorus in a matter of minutes with the aid of fluoroscopy in all but the very severest grades of distention, which are very rare. Thus a true evaluation of the pylorus as a cause of difficulty can be arrived at. The principle of the technique is to inject sufficient air into the stomach to give the tube tip free access to the pyloric antrum. The injection of air in the severest grades of distention can be carried out only in tubes with terminal holes.

A consideration of the perplexing number of tubes which has been available to the profession commercially will show in the light of the foregoing material that their design leaves much to be desired if the previous mistakes in design of the commercially produced so-called Miller-Abbott tubes are to be avoided.

The So-Called Miller-Abbott Double Lumen Tube (1938).—The double-lumen construction was responsible for the discrediting of the work of Johnston and Abbott in that an adequate suction lumen was not provided. The original investigators used separate inflation and suction tubes so that an adequate suction lumen was provided. Further, costly and inefficient metal connecting pieces are obligatory with this type of construction. The metal connection piece introduces a constriction in the suction line and the two connectors to the balloon and suction lumen give rise to confusion so that irrigation fluid or barium may find their way into the balloon. This may have serious consequences if unrecognized.

The tying-on of the condom-thin balloon is not easy, since no metal insert is provided proximally to prevent occlusion of the inflation lumen if the binding is applied too tightly. Leakage of the balloon may occur if the binding is too loosely applied in an attempt to avoid obstruction of the lumen. The balloon is filled and not distended with air. This makes handling of the tube difficult through the bowel wall at operation.

A terminal metal bucket is provided with multiple perforations to form a strainerlike tip. This projects from the balloon and is liable to get caught at constrictions of the gastrointestinal tract. Also, when in use, it clogs rapidly, leaving the burden of aspiration to the holes situated proximal to the balloon. These proximal holes are small and distributed along the tube axis for some distance, so that maximum suction is obtained only at the most proximal hole. The holes are too small and are unsupported. Since the bowel lining membrane can get sucked into the holes, resistance to travel occurs, and this is probably one of the reasons for failure to decompress true adynamic ileus.

The use of mercury in the balloon of the Miller-Abbott tube was suggested by Dr. Ivar Sivertsen of Minneapolis in 1941. It improves greatly the passage rate of the tube into the duodenum, but the tip may often impede if not completely arrest the tube. Doubling of the tube may also occur. The mercury is inserted after the tube has been passed into the stomach. Thus the valuable aid of the mercury to swallowing is lost. If inserted before passage, the danger of rupture of the thin condom is very real. Having gotten the tube into the bowel, its performance still leaves much to be desired. The rubber is very irritating to the nose. None but the largest size is reasonably efficient relative to the suction lumen and this tube is too large for most noses. The metal connection piece offers further resistance to the intestinal contents.

The Harris Rubber Tube (1945) and Its Plastic Modification by Herrerra et Al.—This is a single-lumen tube having a full size condom attached to the end as with the Miller-Abbott tube. Seventy grams of mercury are used as a bolus. The Harris tube has a totally inadequate suction lumen and is made of rubber. The Herrerra modification provides a much larger and adequate lumen and is made of Koroseal surgical tubing. The size of Koroseal recommended by Herrerra et al is prone to kinking, owing to the thin wall selected. Adequate removal of intestinal contents is provided by a suitably large bore. Herrerra et al also suggested using a double condom to minimize the risk of rupture when passing it into the nose. Inflation of the condom spontaneously in the bowel, due to diffusion of gases, has been reported by Harris as a frequent complication. This can be avoided by flushing out the balloon with carbon dioxide, or, more easily, by the use of Neoprene synthetic rubber. The projecting tip of the tube is liable to get caught up, as with the so-called Miller-Abbott tube.

The Cantor Tube (1946).—This is another single-lumen tube of rubber of adequate lumen with multiple unsupported holes placed axially in groups, with the disadvantages previously described. The gravity director head is unnecessarily large and has a blunt end which does not utilize the properties of the mercury to maximum advantage. Arrest or delay at the lower end of the esophagus or pylorus is not infrequent. It is also more difficult to get into the nose than my original design. Autoinflation in the gut is prevented by using Neoprene rubber which will have to be tested by experience. The tube is rather large for the comfort of the patient and thus causes considerable resistance in the nasal passages. It is doubtful whether the mercury bolus alone is as efficient as a balloon bolus, on the basis of experiments on myself with a number of designs of tube. Other faults can be deduced from the foregoing material.

The Kaslow Tube (1947).—This is useless, since the wall of the suction tube is totally inadequate and adequate suction merely flattens the tube.

The Honor-Smathers Tube.—This is a commercially produced plastic tube of the best design to date. The lumen is adequate, the metal connecting piece is well designed though liable to confusion. There is an inflatable gravity director head which is inflated by means of a very small inflation lumen in the wall of the tube. The plastic is poorly compounded in that it gets stiff quickly on use. The holes are unsupported, making the tube liable to kinking. They are arranged axially along the tube and are thus inefficient for reasons before mentioned. The inflatable gravity director head is unnecessarily large and has the same disadvantages as the Cantor type, with the additional one of obstructing the flow of intestinal contents to the aspiration holes when inflated. The Honor-Smathers tube has not been described in the literature.

I hope that soon it will be possible to get an efficient tube made according to my specifications, which have been arrived at by much work and observation. Further interesting work is in progress towards a simple solution of a difficult problem which will put into the hands of my colleagues the means of truly evaluating the long intestinal tube.

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

*Collins, E. N.: The Diagnasis and Treatment af Irritable Colon: Physialagic, Local, Irritative and Psychosomatic Factars, M. Clin. Narth America 32:398 (March) 1948.

✦ Reports and Announcements ✦

AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS

The Industrial Physicians and Surgeons of the United States and Canada will hold their 34th annual meeting at Detroit, Michigan, April 2 to 9, 1949, with headquarters at the Book-Cadillac and Statler Hotels. Participating groups are the:

American Conference of Governmental Industrial Hygienists
American Industrial Hygiene Association
American Association of Industrial Dentists
American Association of Industrial Nurses

The week-long program is featured by (1) Surgical Clinics at the Henry Ford and Harper Hospitals, (2) scientific sessions on such timely subjects as the problems created by atomic radiation, cardiovascular diseases among the employed, alcoholism in industry and toxicities of industrial substances such as beryllium, agricultural chemicals and rare metals and (3) special sessions for physicians in steel manufacturing and heavy industry, in rubber, petroleum and chemicals, in coal mining and metal mining.

Other features are the arrangements for plant tours along the assembly lines of the great automobile companies and through the plants of many of Detroit's famous manufactories. All physicians and surgeons, industrial hygienists, industrial nurses and others interested in industrial health are invited to attend.

Hotel reservations should be made with hotels direct.

AMERICAN COLLEGE OF ALLERGISTS

The American College of Allergists will meet at the Palmer House in Chicago, April 14 to 17 inclusive. More than 1,000 physicians from North America and abroad, who are interested in allergy, are expected to attend. All physicians are urged to attend. An interesting program covering a wide range of allergic conditions will be presented.

Reservations should be made directly with the Reservation Manager, Palmer House, Chicago 90, Illinois, giving the time of arrival and departure.

THE INTERNATIONAL ACADEMY OF PROCTOLOGY

The International Academy of Proctology was founded July 6, 1948, for the purpose of advancing the practice and study of diseases of the colon, to stimulate research, to promote the practical application of all recent advances in proctology, to encourage instruction in the specialty and to publish articles on the subject. Those specializing in proctology, or whose interest lies in the field of proctology, are eligible to membership. Specialists in the field, whose outstanding achievements meet the approval of the Committee on Membership, are eligible to membership as Honorary Fellows. Application should be made to Dr. Alfred J. Cantor, 43 Kissena Boulevard, Flushing, Long Island, for charter membership or Fellowship in the Academy.

INTERNATIONAL CONGRESS ON RHEUMATIC DISEASES

An International Congress on Rheumatic Diseases will be held at the Waldorf Astoria Hotel in New York City from May 30 to June 3, 1949. Mornings will be devoted to addresses, and clinics will be held in the afternoon. Some 150 physicians from foreign countries are expecting to attend, and a number of distinguished foreign guests will participate. English, French and Spanish will be the official languages and instantaneous translations of the scientific papers will be made by means of the I.B.M. wireless system. The meeting is open, and the registration fee is $10.00. The Congress office is at 2020 East 93rd Street, Cleveland 6, Ohio.

USPHS EXAMINATION FOR MEDICAL OFFICERS

Competitive examinations for appointment of medical officers in the Regular Corps of the United States Public Health Service will be held May 3, 4, and 5, 1949, in various cities throughout the country, Chicago being the nearest for Minnesota aspirants.

Appointments will be made in the grades of Assistant Surgeon (1st Lieutenant) and Senior Assistant Surgeon (Captain), and are of a permanent nature.

Applicants now serving internships will be allowed to complete them before going into active duty. Examinations will consist of written professional tests, an oral interview, and a physical examination.

Entrance pay for Assistant Surgeons with dependents is $5,011 per annum; for Senior Assistant Surgeons with dependents, $5,689. These figures include the $1,200 annual additional pay received by medical officers, as well as subsistence and rental allowance.

Complete applications must be received by April 4, 1949. Forms may be obtained by writing to Surgeon General, United States Public Health Service, Washington, D. C.

COMMUNITY SEEKS PHYSICIAN

The Methodist church is seeking a physician to locate at Jasper, Arkansas, to serve in Newton County where 10,000 inhabitants are without a doctor. If a doctor can be found, the Methodist church will organize community support for the erection of a clinic with a laboratory and a few beds, and will subsidize the establishment until a practice can be built up. The state will probably supply a nurse. For further information, write Dr. M. O. Williams, Board of Missions and Church Extension, 150 Fifth Avenue, New York 11, N. Y.

COURSE IN CANCER NURSING

A new course in cancer nursing will be offered during the spring quarter by the University of Minnesota's School of Nursing. The course, beginning on March 28, is open only to graduate nurses. Serving on the faculty will be Mrs. Genevieve Seller of the Public

(Continued on Page 312)

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(Continued from Page 310)

Health Service of the Federal Security Agency, and Helen Hanson, cancer nursing specialist on the University School of Nursing staff.

The course is being offered in answer to the requests of many nurses who wish to assist in the cancer control program. The planning of the curriculum was executed by several co-operating groups: representatives of the State Board of Health, the Minneapolis Department of Health, Twin Cities Public Health Nursing Agencies, the Minnesota League of Nursing Education, and the University Schools of Nursing and Public Health.

ST. LOUIS COUNTY

The St. Louis County Medical Society held its annual meeting in January at the St. Mary's Hospital conference room. Elected as president of the group was Dr. M. H. Tibbetts of Duluth.

CRIPPLED CHILDREN CLINICS

Each year, in spring and fall, the Crippled Children's unit of the State Department of Social Security holds clinics, conducted by an orthopedist and a pediatrician, throughout the state. Practitioners may refer children for examination and advice irrespective of their financial status. The clinics are free and are in the form of case findings and follow-up of former Gillette Hospital patients.

The spring schedule for 1949 is as follows:

St. Cloud	March 19	Technical High	Stearns Benton Sherburne
Faribault	March 26	High School	Rice Goodhue Scott Dakota
Thief River Falls	April 2	High School	Pennington Marshall Red Lake Roseau Kittson
Worthington	April 9	High School	Nobles Jackson Pipestone Cottonwood Murray Rock
Grand Rapids	April 23	Senior High	Itasca Cass
Austin	April 30	Central High School	Mower Freeborn Steele Dodge
Detroit Lakes	May 7	High School	Hubbard Mahnomen Becker Clay
Moose Lake	May 14	High School	Aitkin Cook Carlton Pine Lake
Brainerd	May 21	Franklin Junior High	Crow Wing Wadena Mille Lacs Todd Cass Aitkin
International Falls	June 4	Alexander Bake	Koochiching
Morris	June 11	High School	Stevens, Grant Pope, Traverse, Douglas, Bigstone

NURSING COURSE OPEN TO MEN

In response to the demand for male nurses to assist in the care of male orthopedic, and psychiatric patients, the University of Minnesota School of Nursing is planning to open its basic professional nursing course to men in the coming fall. The University's basic nursing training consists of a five-year program, resulting in a degree. Men admitted to the School of Nursing must have completed college courses in English, the basic biological, physical and social sciences, and the other required general education courses.

HENNEPIN COUNTY SOCIETY

As of this coming October, Dr. Robert F. McGandy will assume the post of president of the Hennepin County Medical Society. The election took place in early February. Other officers elected were: Dr. John H. Moe, first vice president; Dr. Ernest R. Anderson, second vice president; Dr. L. Haynes Fowler, and Dr. Horatio B. Sweetser, Jr., were elected to the board of directors; Dr. Thomas J. Kinsella and Dr. Donald McCarthy, board of censors; Dr. Malcolm B. Hanson and Dr. Robert L. Wilder, board of ethics. To the board of trustees were elected Dr. Arthur C. Kerkhof and Dr. Malcolm C. Pfunder. Delegates to the Minnesota State Medical Association will be Dr. James K. Anderson, Dr. Lawrence R. Boies, Dr. Ralph H. Creighton, and Dr. Willard D. White.

RED RIVER VALLEY SOCIETY

Dr. George Sather of Fosston was elected president of the Red River Valley Medical Society at the Society's annual meeting, which took place in Crookston in January. Other offices filled were as follows: Dr. K. W. Covey of Mahnomen was elected vice president; Dr. R. O. Sather of Crookston, secretary-treasurer, and Dr. Eugene Sorn of Erskine, censor.

The annual banquet was held at the Crookston Hotel preceding the business meeting. Approximately twenty-five physicians were present.

STEARNS-BENTON MEDICAL SOCIETY

At the regular meeting of the Stearns-Benton Medical Society, held in St. Cloud in January, the attending physicians voted in favor of an improved public relations program which has as its purpose informing the public about the issues involved in the problems of medical care and socialized medicine.

Speaking before the group, on the subject of socialized medicine and co-operative medical enterprises, were Dr. L. A. Vernath and Dr. J. P. McDowell. Dr. Gordon Kamman, St. Paul, discussed the role of the general practitioner in alleviating neurotic difficulties in patients. Introduced by Dr. E. J. Smitz of Holdingford was Dr. Mitrofan Smorczok of Poland, who, now that the citizenship clause has been removed as a requirement for the right to practice in Minnesota, intends to acquire the necessary training and establish practice. The meeting was presided over by Dr. L. M. Evans.

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WASHINGTON COUNTY MEDICAL SOCIETY

The Washington County Medical Society held its regular monthly meeting February 8, 1949.

The meeting was devoted entirely to the consideration of the proceedings of the Grass Rôôts meeting in St. Louis, and no compliments were showered on the erratic Mr. Ewing. The major part of the evening was devoted to the offerings of the Speakers at the County Officers meeting January 14, and comments thereon. Pamphlets on "Medical Care in the Atomic Age" were distributed to members.

GRANTS FOR RESEARCH IN CARDIOVASCULAR DISEASE

The American Heart Association has announced that applications for fellowships and for research in cardiovascular disease are available. Application blanks may be obtained by addressing Medical Director, American Heart Association, 1775 Broadway, New York 19, New York.

The ultimate aim of the American Heart Association is to develop a continuing program of productive research within the broad field of diseases of the heart and blood vessels.

The recommendations of the Research Policy Committee were published in the *American Heart Journal* (36:463, September, 1948). These policies are subject to modification by the membership of the Scientific Council of the American Heart Association and approval by the Board of Directors.

The research program of the American Heart Association will be closely co-ordinated with that of the National Heart Institute of the National Institutes of Health, U. S. Public Health Service and with the Life Insurance Medical Research Fund.

LOWEST DEATH RATE IN 1948

The lowest death rate in Minnesota's history was recorded in 1948. Based on reports received up to February 1, 1949, the death rate for the preceding year was between 9.4 and 9.5 per 100,000 population. Not since 1921, the last record year, has the death rate been so low as 9.5. In 1947 it was 9.8. Deaths reported from all causes during 1948 numbered 27,689. Births recorded for the same period totaled 72,500. The all-time high was 75,469 births in 1947.

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Woman's Auxiliary

BROOKINGS REPORT AMONG FIRST TO REFUTE EWING

Mrs. Elmer Rusten

"It is apparent that the United States under its voluntary system of medical care has made greater progress in the application of medical and sanitary science than any other country."

This conclusion is one that physicians and others interested in maintaining the present methods of medical care have been voicing ever since the first Wagner-Murray-Dingell bill made its appearance on the legislative scene. But the quotation does not come from a physician, nor from anyone connected with the medical profession. It is point two in the "Conclusions and Recommendations" of *The Issue of Compulsory Health Insurance,* an impartial, factual study made and published by the Brookings Institution at the request of Senator H. Alexander Smith.

Senator Smith, chairman of the Subcommittee on Health of the senate committee on Labor and Public Welfare, asked the Brookings staff to make the survey because of the number and complexity of the health bills being presented in congress.

Findings of the Institution matched the not-always-fact-supported beliefs of those who favor the democratic way of furnishing and obtaining medical care.

When the fact-sifting was over, the Brookings people found themselves committed by logic to the following:

That the draft rejection statistics are "unreliable as a measure of the health of the nation"; that conditions in extremely poor sections of the country could not be helped by subsidies—some form of economic transfusion is needed to cure the basic ills of these communities; that the people who are unable to pay for adequate medical care now would not be able to do so under compulsory health insurance either because "they would lack the means to attain and maintain an insured status."

Brookings experts also warn that governmental regulation and control of medical care would necessarily result in lowered quality of care at an increased cost (in tax dollars); that the government would inevitably come between the doctor and his patient.

They point out that the issue for the large majority of American families is "not whether they can afford medical care but whether they should be compelled by law to pool their risks." By way of explanation, the report adds that this large majority is able to pay for medical care—it is just a question of "giving it a high priority among the several objects of expenditure."

The Brookings report is by no means entirely negative; the researchers do not stop with disapproving the compulsory health insurance plan; they have alternative suggestions for action:

"For the time being the national government and many of the state governments may well devote their resource and energies to: (a) Research and developments in the field of public health; (b) Health education at the school level; (c) Teaching of preventive medicine; (d) Assisting in the acquisition of physical facilities and training of personnel; (e) Providing systematic care for the indigent and medically indigent."

AUXILIARY STRESSES MEDICAL INSURANCE

Need for voluntary prepaid medical and hospital insurance was stressed at a roundtable discussion of the Red River Valley Medical Auxiliary, held January 18 at the home of Mrs. A. R. Reff. Particular attention was given to the plans of Blue Cross and Blue Shield, now in operation.

Mrs. C. L. Oppegaard reported on the Health Day held in Crookston last October 7, and Mrs. C. G. Uhley and Mrs. M. E. Janssen reported on the recent state Tuberculosis Essay contest and judging.

The session was held following a dinner with the Medical society at Hotel Crookston.

PARK REGION GROUP STUDIES TUBERCULOSIS

Mrs. H. B. Thompson

"Tuberculosis, a Problem," a talk by Miss Margaret Breen of the Minnesota Public Health Association, led off discussion at the January 25 meeting of the Park Region Medical Auxiliary at Fergus Falls. Individual members of the organization are assisting the mobile x-ray units in their own communities, it was noted.

Prior to the discussion, the women were entertained at tea by Mrs. Glenn Mouritson.

AUXILIARY SPONSORS TUBERCULOSIS TALKS EIGHTEEN YEARS

Mrs. David Halpern

The Woman's Auxiliary of the Minnesota State Medical Association has concluded its eighteenth year of sponsoring the high school speaking project on tuberculosis with the donation of two trophies and ten medals.

The project was conducted by the Minnesota Public Health Association, in co-operation with radio station WCCO. An estimated 10,000 high school students prepared talks on "What You Can Do About Tuberculosis" during November and December as an educational feature of the Christmas Seal campaign.

Local judges selected three scripts from each school to be submitted for state judging and the scripts were presented locally before the high school assemblies and adult audiences; in some cases they were broadcast on local radio stations.

The state committee of judges chose ten winning scripts, eight from the senior high school division and two from the junior high school division. These ten authors were introduced in interview programs over WCCO December 11 and 18, E. A. Meyerding, M.D., executive secretary of the Minnesota Public Health Association, conducting the interviews. Mrs. H. F. Wahl-



quist, president of the Auxiliary, presented the Senior High School trophy on the final broadcast.

Thomas Wahl of Cathedral High School, St. Cloud, won the senior division trophy for his school, and Bernard T. Johnson of Franklin Junior High School, Brainerd, the junior division.

The complete list of winners is as follows:

Senior High Schools

First Place Plaque Winner: Thomas Wahl, Cathedral High School, St. Cloud.

Second Place: Gertrude Rath, Loretto High School, Caledonia.

Honorable Mention: Ruth Weber, St. Francis High School, Little Falls; Rosemary Mahoney, Good Counsel Academy, Mankato; Janet Jefferson, Monroe High School, St. Paul; Lois Gravos, Central High School, Red Wing; Arlyn Reinhart, New Ulm High School, New Ulm; Nancy Jane Noreus, Cloquet High School, Cloquet; John Smith, Little Falls High School, Little Falls; Eillen Heerdt, Bird Island Public Schools, Bird Island; Lorraine Hoyhtya, New York Mills High School, New York Mills; Marilyn Prozinski, St. Francis High School, Little Falls; Joseph M. Yaeger, Milaca High School, Milaca; Catherine Meyer, Marshall High School, Marshall; Patricia Hoolihan, St. Joseph's Academy, St. Paul; Burton Wyss, Greenway High School, Coleraine; Juliana Welle, St. Francis High School, Melrose; Lois Kruckeberg, Blooming Prairie High School, Blooming Prairie.

Junior High Schools

First Place Trophy Winner: Bernard T. Johnson, Franklin Junior High School, Brainerd.

Second Place: Ray Salo, Washington Junior High School, Duluth.

Honorable Mention: Patricia Faust, St. Francis High School, Little Falls; Andres Gnifkawski, Cathedral High School, St. Cloud; Susan Kjerner, Rochester Junior High School, Rochester; Loralee Lewis, Central High School, Crookston; Barbara Bossue, Franklin Junior High School, Brainerd; Ronald Duthals, Stillwater Junior High School, Stillwater; Delores Boucher, St. Joseph's Academy, Crookston.

NEW OFFICERS FOR SOUTHWEST AUXILIARY

Mrs. W. G. Benjamin of Pipestone is the new president of the Southwestern Minnesota Medical Auxiliary. Other newly elected officers are: Mrs. David Halpern, Brewster, president-elect; Mrs. John O. Lohmann, Pipestone, vice president; Mrs. Gerrit Beckering, Edgerton, secretary-treasurer.

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BETTY FOLEY, *Chairman, Enrollment of Student Nurses, Minnesota Nurses Association.*

What is nursing? How do I become a nurse? How often can I get home? What kind of nursing will I do when I graduate?

These are the questions most frequently asked by the high school student who is trying to make a vocational choice. The Minnesota Nurses Association, realizing high school students' and graduates' need for information, formed a committee on Enrollment of Student Nurses to inform the public about the nursing profession and to

*This report was prepared by Miss Foley at the request of Mrs. Bernard O'Reilley, Emergency Nursing Chairman.

assist the prospective student in preparing herself for her education.

Unfortunately the "nurse in white" dream of many a person melts with the knowledge of school and professional qualifications for nursing: A girl or boy must be a graduate of an accredited high school, must be between the ages of eighteen and thirty-five, in good health, with personal characteristics favorable to nursing and a number of special aptitudes.

Before a student enters school, he or she takes a standardized test. Admission records are studied, a personal interview held and, finally, the candidate's abilities, capacities and character traits are summarized. The school then makes a decision, guiding those suitable into nursing and suggesting other vocations to those who do not seem fitted for the nursing profession.

Once accepted, the student must choose again because there are four types of schools: the school of practical nursing; the three-year curriculum leading to a certificate of nursing and registration; the four-year curriculum leading to a bachelor of arts or bachelor of science degree; and the five-year curriculum which results in the degree of bachelor of science in nursing education or public health nursing. Each type of education prepares the person for some specific position: bedside nurse, hospital nurse, supervisor, army or navy nurse, research nurse, instructor, administrator—even housewife.

More specific information about nurses and nursing may be secured from local hospitals or the Minnesota Nurses Association, 2395 University Avenue, Room 310, Saint Paul, 4.

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AUXILIARIES LAUDED IN HEALTH JOURNAL

Minnesota's Health, published by the Minnesota Department of Health, observed in its January issue that medical auxiliaries of the state were co-operating in the educational and fund-raising campaign of the American Heart Association.

Auxiliaries noted specifically were: East Central and Southwestern Minnesota, Hennepin, Mower, Nicollet-Le Sueur, Ramsey, St. Louis, Stearns-Benton, Olmsted-Houston-Fillmore-Dodge and Washington counties.

NEW MSMA PRESIDENT GREETS AUXILIARY

Ernest M. Hammes, M.D.

One of the most important heritages of any president of the Minnesota State Medical Association is the knowledge that during his term of office he will have the advice and co-operation of the Woman's Auxiliary.

I don't think that there has ever been a time when the Auxiliary was thought of as "just another women's club"; from its beginning the association's better half proved itself to be a courageous, forward looking, industrious group of women. And we of the association have constantly before us new examples of the Auxiliary's progressive character — Health Days, public speaking, campaigns for various medically connected organizations, public relations activities stemming from conferences like the PR Workshop last September.

Perhaps we don't express our admiration often enough, so may I take this opportunity to extend to you the grateful appreciation of the Minnesota State Medical Association and my personal thanks for the work you have done and the work which we expect of you this year, as scientific medicine confronts the threat of increasingly questionable legislation.

One thing should be strongly emphasized. Streptomycin is not an overnight cure-all for tuberculosis. Like other valuable drugs, such as penicillin and sulfonamides, it has its assets, limitations and liabilities. It must not be considered as a substitute for sanatorium care, rest in bed and other well-established methods of treatment, such as collapse therapy and other surgical procedures.—Karl H. Pfuetze, M.D., *Diseases of Chest,* (Sept.-Oct) 1948.

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In Memoriam

WILLIAM J. DAILEY

Dr. W. J. Dailey, for twelve years a practicing physician at Blooming Prairie, Minnesota, died suddenly January 9, 1948, of a cerebral hemorrhage at his home in Oakland, California.

William Dailey was born February 12, 1884, at Hudson, Wisconsin. He attended Hamline Medical School and obtained his medical degree from the University of Minnesota in 1911. After an internship at Ancker Hospital, Saint Paul, he began practice in Blooming Prairie. In 1925 he moved to Oakland, where he has since practiced. Planning to spend his last days in Blooming Prairie, he purchased a home there. He found the climate of Minnesota too vigorous for his impaired health, however, and moved back to Oakland.

On September 30, 1913, Dr. Dailey married Anne Hanchy. She and their two daughters, as well as two brothers and one sister, survive him.

FREDERICK ARTHUR DRAKE

Dr. Frederick A. Drake, a practitioner at Lanesboro, Minnesota, for fifty-one years, passed away January 31, 1949, after an illness of five years.

Dr. Drake was born July 8, 1870, at Rushford, Minnesota, the son of the late Mr. and Mrs. Charles Drake. He obtained his medical degree from the University of Minnesota Medical School in 1896, and interned at St. Joseph's Hospital, Saint Paul.

Beginning practice at Lanesboro in 1898, he became active in the life of the community in a manner that made him an important civic figure. He served as mayor of Lanesboro for many years, was a member of the school board, city health officer, and physician for the Chicago, Milwaukee Railroad.

Dr. Drake married Nellie F. Rafferty of Peterson, Minnesota, on November 22, 1899. He died on March 29, 1948. He is survived by a son, Charles, of Lanesboro, and one brother, Dr. Charles R. Drake, of Minneapolis.

JOHN HENRY WALLINGA

Dr. J. H. Wallinga, of Saint Paul, was killed in an automobile accident on February 8, 1949. His wife and her brother, Mr. E. M. Stern of Fargo, were seriously injured in the accident.

Dr. Wallinga was born in December, 1889, in Hull, Iowa. He graduated from the University of Minnesota Medical School in 1919. He has practiced in Saint Paul since graduation and at one time acted as police surgeon in Saint Paul.

He is survived by his wife and his son, Dr. Jack Wallinga, who recently completed his internship in Cleveland.

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Of General Interest

Dr. F. J. Vollmer was recently elected president of the Winona County Medical Society.

* * *

Dr. F. N. Grosse of Clarissa has been appointed acting health officer of his community.

* * *

Dr. Martin M. Even has opened offices for the practice of urology at 307 Lowry Medical Arts Building, St. Paul.

* * *

Dr. David S. Thorsen has announced the opening of offices at 930 Lowry Medical Arts Building, St. Paul, for the practice of psychiatry and neurology.

* * *

Dr. N. E. Tosseland, who recently received a fellowship at the Mayo Clinic, has established new offices in Duluth.

* * *

Dr. E. Juers of Red Wing attended a meeting of the American Academy of Orthopedic Surgery in Chicago during the last week of January.

* * *

Dr. W. L. Burnap of Fergus Falls spent a few days early in February in Chicago, attending a meeting of the National Council on Medical Service.

* * *

Dr. Charles Albert Haberly, Thief River Falls, opened offices as physician and surgeon at Middle River recently.

* * *

Dr. Al. Emond of Farmington attended the course in pediatrics offered at the Center for Continuation Study at the University of Minnesota in February.

* * *

Dr. R. V. Gandrud, of Albert Lea, in February underwent an appendectomy which necessitated the temporary cessation of his practice.

* * *

Dr. F. A. Lengly, recently of Isanti, has transferred his practice to St. Louis Park. Dr. Lengly had maintained offices in Isanti since last summer.

* * *

Dr. V. L. Silver of Clarkfield marked his thirtieth year as a physician in Yellow Medicine County early this year.

* * *

Application blanks for membership in the American Academy of General Practice may be obtained from Dr. Gilbert P. Wengel, 891 Rice Street, St. Paul.

* * *

Dr. H. M. Weber of Rochester gave a paper entitled "The Diagnosis of Early Intestinal Cancer" at a meeting of the Detroit Roentgen Ray and Radium Society which was held in Detroit early in February.

* * *

Dr. O. B. Patch, Duluth, spoke recently before the monthly meeting of the eye, ear, nose, and throat section of the St. Louis County Medical Society. He discussed "Some Aspects of Head Pains."

Dr. O. T. Claggett of Rochester attended the meeting of the Gallie Club in Toronto early last month. While there he delivered a paper on "The Indications for Schoemaker-Billroth I Gastric Resection."

* * *

Dr. A. M. Snell of Rochester, who attended the Mid-South Postgraduate Medical Assembly in Memphis, Tennessee, recently, presented a paper on "Diagnostic Procedure in Liver Disease in Jaundiced Patients."

* * *

In the latter part of January, Dr. W. H. Bickle of Rochester attended a meeting of the American Academy of Orthopaedic Surgeons in Chicago where he assisted with examinations.

* * *

Dr. T. H. Seldon, Rochester, traveled to Danville, Illinois, to attend a meeting of the Vermilion County Medical Society early in February. Dr. Seldon spoke to the group on the "Value of Blood Transfusion."

* * *

Dr. O. H. Hegge of Austin, Minnesota, is entering his fifty-sixth year as a physician. In honor of the event, he was recently presented with a certificate of life membership in the Minnesota State Medical Association.

* * *

Dr. and Mrs. F. M. Manson of Worthington sailed from Los Angeles Harbor early this year on a winter cruise to Hawaii. This is a return trip south for the Hansons, as they were there last winter also.

* * *

Dr. J. L. Holcomb, of Marine-on-St. Croix, is vacationing at the Hotel Patricia, Miami, Florida. He reports that he is recuperating very satisfactorily from a somewhat prolonged indisposition.

* * *

Attending the Continuation Center course in obstetrics and gynecology at the University of Minnesota was Dr. Bernice Thoreson of St. Paul. The course was offered during the first week of January.

* * *

Speaking on the subject "The Surgery of Intraspinal Lesions," Dr. W. M. Craig of the Mayo Clinic gave the annual John T. Hodgen Lecture at the meeting of the St. Louis Surgical Society during the middle of January.

* * *

As active participants in the community-wide x-ray survey which was begun in February at St. Louis Park were the following: Dr. Robert N. Barr, Minneapolis, Hennepin County Christmas Seal Chairman; Dr. Karl Pleissner, Dr. H. W. Darby, and Dr. Edmund Murphy.

* * *

Dr. John M. Grogan of Ceylon, accompanied by his father-in-law, Mr. Lloyd Stockdale, left for Daytona Beach, Florida, during the second week of February where they joined Mrs. Grogan and Mrs. Stockdale. During Dr. Grogan's absence, Dr. R. O. Burmeister of Welcome assumed his house-calls.

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DEALERS IN DEPENDABLE MERCHANDISE

Dr. Edward Detjen, formerly of Robbinsdale with offices in Minneapolis, has now started practice at the Big Fork Hospital where the need for a local physician has been severe for some time.

* * *

Dr. and Mrs. Wallace Lueck, formerly of Minneapolis, moved recently to 2939 York Avenue in Robbinsdale. Dr. Lueck, however, continues his practice at the Nicollet Clinic.

* * *

Dr. E. E. Wollaeger, Mayo Clinic, attended a meeting during the first week of February in Johnson, Tennessee, where he spoke on "Pancreatitis" to members of the Tri-County Medical Society and the staff of the Veterans Administration Hospital.

* * *

Dr. J. Emery Frank, formerly of Marshall, has established a new practice in Salt Lake City, Utah. Before leaving Marshall, Dr. Frank turned his patient files over to Dr. Kenneth Peterson.

* * *

Dr. Benjamin Spock, chief psychiatrist of the Rochester Child Health Project, spoke at a public meeting sponsored by the Minnesota Mental Hygiene Society at the University of Minnesota in January. His subject was "A Pediatrician Looks at Mental Health."

* * *

The Sioux Valley Medical Association announced last month that over 200 physicians from Minnesota, Iowa, Nebraska and South Dakota attended the annual convention which was held at Sioux Falls.

Dr. L. G. Idstrom spoke recently on the topic, "X-Ray Physics and Electrical Circuits of an X-Ray Machine" at a meeting of the Arrowhead Society of X-Ray Technicians. Dr. Idstrom is an associate radiologist at the Swedish Hospital in Minneapolis.

* * *

Dr. O. M. Heidberg, of Worthington, delivered a talk on "Group Practice of Medicine," in February, to a senior group of medical students at the University of Minnesota. His talk marked the third year Dr. Heidberg has spoken for the senior class. He was teaching fellow at the University's department of internal medicine from 1936 to 1938.

* * *

Dr. F. W. Walter, of International Falls, spoke at a meeting of the Border Registered Nurses Club in February. His discussion centered about the causes and effects of leprosy. Dr. Walter accompanied his talk with slides of Korean lepers which he took while serving in the Pacific theatre of war.

* * *

An innovation in the method of treating thigh bone fracture has been developed by Dr. John H. Moe and Dr. Harry B. Hall, both of Minneapolis. The two physicians presented a paper on their work before the sixteenth annual meeting of the American Academy of Orthopaedic Surgeons which was held in Chicago late in January.

* * *

On January 27, Dr. and Mrs. H. H. Young of Rochester left on a sixteen-day cruise of the Caribbean. Sailing on the flagship *America,* the Youngs left from New

York, beginning a trip which carried them through San Jann, Puerto Rico, Trinidad; and, return, via Havana, Cuba.

* * *

Dr. Miland E. Knapp, associate professor of physical medicine at the University of Minnesota, and Nellie Gorgas, superintendent of St. Barnabas Hospital, spoke last month in Minneapolis at a meeting of Crippled Child Relief Inc.

* * *

Giving a report of his experiences as medical observer of the Bikini Atom Bomb experiment, Dr. Asher White of Minneapolis spoke recently at the Messiah Lutheran Church to members of the men's clubs of both the Messiah Lutheran and Our Saviour's Lutheran Churches.

* * *

Dr. A. B. Rosenfield, acting Medical Director of Health Unit Six, delivered a talk on Child Health at the Coon Rapids Farm Bureau Meeting on January 20. Dr. Rosenfield accompanied his talk with movies on child diseases.

* * *

Dr. C. F. Code of Rochester attended the Conference of Metabolic Interrelations, sponsored by the Josiah Macy, Jr. Foundation of New York City, recently. Dr. Code delivered a paper on "Determination of Gastric Secretory Inhibitor Activity and Its Occurence in Gastric Juice and Gastric Mucin."

* * *

Dr. H. L. Williams, Mayo Clinic, attended the Section of Otolaryngology and Opthalmology of the Houston Academy of Medicine in Texas early in February, speaking on "Changing Concepts of the Treatment of Sinusitis," and "Diagnosis and Treatment of Ménière's Disease."

* * *

In the third week of January, Dr. N. W. Barker of Rochester attended a meeting of the Josiah Macy, Jr. Foundation Conference on "Blood Clotting and Allied Problems" in New York City. His paper, "Surface Effects on Coagulation," was presented before the Conference.

* * *

In response to an invitation extended by the Egyptian government, Dr. G. J. Thompson, head of the section in urology, Mayo Clinic, left in January to give a short course of instruction at the University of Cairo. Dr. Thompson was accompanied by his wife and young son on the trip to Egypt.

* * *

Dr. Harry W. Christianson and Dr. Robert J. Jenner have announced their recent partnership. They have taken over the practice of the late Dr. Harry F. Bayard and are located at 420 Medical Arts Building, Minneapolis. Their practice is limited to surgery and diseases of the intestinal tract.

* * *

Dr. O. L. Pearson of Warroad had an unusual call last month when he was asked to help an injured workman in Northwest Angle. Dr. Pearson was flown to the scene of the accident where he treated the workman, before both patient and physician were flown back to Warroad.

* * *

Secretary of Defense, James E. Forrestal has recently appointed Dr. F. J. Braceland of Rochester as a member of the Armed Forces Medical Advisory Committee, whose principal function at the present time is the co-ordination and unification of the medical services in the armed forces.

* * *

Dr. O. B. Mork, Jr., of Worthington, delivered a talk in Pipestone on February 22 which launched the Second Southwestern Minnesota Health Day. Dr. Mork, Medical Director of State Health Department District Five, reviewed in his morning "keynote" talk the health progress which has been made during the past year.

* * *

Dr. George Haggard of Minneapolis celebrated his ninety-third birthday on January 18. Though Dr. Haggard finds it necessary to reduce his medical activities more and more, he has not relinquished his practice entirely; thereby gaining the title of Minnesota's oldest practicing physician.

* * *

Attending a meeting of the Chicago Neurological Society were Drs. W. M. Craig, J. W. Kernohan, and H. W. Woltman of Rochester. Each spoke: Dr. Craig, on the "Surgery of Intraspinal Lesions"; Dr. Kernohan, on "The Pathology of Spinal Cord Tumors"; and Dr. Woltman, on "Intramedullary Tumors of the Spinal Cord and Gliomas of the Intradural Filum Terminale."

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Sixty-three public health centers have been approved to date for Federal aid under the National Health Program. Total Federal funds of more than $107,000,000 have been allocated to hospital construction projects under this program, to cover the cost of a total of 645 hospital and health facilities.

* * *

Dr. Ralph L. Estrem of Fergus Falls received a leave of absence from the Estrem Clinic recently in order to augment his training in x-ray and internal medicine. Dr. Estrem and his family will make their residence in Minneapolis during the period required for his postgraduate studies.

* * *

The first memorial lecture in honor of the late Dr. Luthard M. Bergh of Montevideo was presented on February 16 at the University of Minnesota by Dr. A. C. Ivy, physiologist of the University of Illinois. The talk, delivered at the Minnesota Museum of Natural History, was sponsored by the Minnesota Medical Foundation.

* * *

Dr. Katherine A. Nye was honored earlier this year when the Ramsey County Medical Society presented her with an award designating her the outstanding practitioner of Ramsey County. Dr. Nye and her sister, Dr. Lillian Nye, have maintained practices in this area since their graduation from the Medical School of the University of Minnesota—graduating in 1915 and 1921, respectively.

At the Mid-West Cancer Conference, which was held in Wichita, Kansas, during the third week of January, two papers were presented by Dr. Talbert Cooper of Rochester. His subjects were: "Diagnosis of the Leukemias and the Lymphoblastoma Group" and "Recent Advances in the Treatment of the Leukemias and the Lymphoblastoma Group."

* * *

Dr. W. F. Kvale of Rochester presented a talk in January on the "Diagnosis and Treatment of Occlusive Arterial Disease" before the Sioux Valley Medical Association in South Dakota. Accompanying him on the trip was Dr. R. L. Parker who also presented a paper: "Management of Acute Myocardial Infarction with Emphasis on Anticoagulant Therapy."

* * *

Dr. J. Edwards of Rochester attended two meetings in Washington, D. C., during January: The Army Institute of Pathology and the Committee of the American Heart Association, for the establishment of a registry on cardiovascular pathology. He delivered a talk before the former group, speaking on "Pathology of Coarctation of the Aorta."

* * *

Of sixty-four medical men now employed as teachers at the Army Medical Department Research and Graduate School in Washington, D. C., three are from Rochester, Minnesota. They are: Drs. Wallace E. Herrell, Jesse L. Bollman, and K. G. Wakim. The course, open

only to medical men, is teaching the basic sciences on the graduate level for physicians in training in the Army Medical Department Professional Training Program.

* * *

Dr. James C. Crabtree has moved from Princeton, Minnesota, to Bessemer, Alabama, where he will be associated with two other physicians on the staff of the United States Pipe and Foundry Company. There will be adequate opportunity also for him to maintain a private practice. Dr. Crabtree was associated with Dr. A. T. Kapsner at the Princeton Clinic.

* * *

Dr. Corwin Hinshaw is leaving his position on the Mayo Clinic staff to become clinical professor of medicine at Stanford University, Palo Alto, California, as of April 1, 1949. Dr. Hinshaw visited Los Angeles in January in order to present lectures for a course on pulmonary disease, sponsored by the American Trudeau Society.

* * *

It was announced the first of the year that Dr. J. A. Sanford, in partnership with Dr. Norton Rogin, had relinquished practice in Farmington, continuing solely at the Orchard Lake office—both of which establishments Drs. Rogin and Sanford run in association. They will continue to operate and care for their patients together at Sanford Hospital, as in the past.

* * *

Dr. R. W. Keyes, originally of Pipestone, moved his residence and practice to Hastings in January in association with Dr. R. C. Radabaugh. Dr. Keyes, a graduate of the University of Minnesota Medical School in 1946, interned at the Mercy Hospital in Chicago before completing his residency at the Mercy Hospital in Janesville.

* * *

Dr. Robert Semsch of Minneapolis was named county physician of Hennepin County in January to replace Dr. Charlotte Morrison whose term, held since 1940, expired on January 1. Dr. Semsch's duties will include medical services to the Home School for Girls, the Glen Lake Home School for Boys, and the Vince Day Center for Children.

* * *

Dr. Randolph Lee Clark, Jr., former Mayo Foundation Fellow in Surgery, was appointed recently as dean of the University of Texas Postgraduate School of Medicine in Houston. Dr. Clark, associated with the Foundation from 1935 to 1938, has in recent years been director of the M. D. Anderson Hospital for Cancer Research in Houston.

* * *

Dr. C. M. Niles, practicing physician in Forest Lake, was the object of a freak accident late last month which cost him a broken hip. While asleep in his home, a large truck crashed into Dr. Niles' home, throwing him some several feet into his yard. Aided by Dr. J. A. Poirier, Dr. Niles administered self-treatment, whereupon he was rushed to St. Barnabas Hospital, Minneapolis.

* * *

Dr. Robert Hunt of Fairmont was named chairman of the Martin County Nursing Advisory Board of 1949 at the regular meeting of the board on February 7. Elected as board members were: Dr. A. H. Schmidt of Triumph, and Dr. A. C. Burmeister of Fairmont. They were elected to fill the vacancies left by Dr. John Campbell and Dr. Robert Bailey.

* * *

Grants of $209,838 by the National Cancer Institute to support laboratory and clinical research in cancer were announced in January by Oscar R. Ewing, Federal Security Administrator. Grants of $1,319,000 for cancer control, as well as research, which were also recommended by the National Advisory Cancer Council, were offered in December.

* * *

The American Hearing Society has announced that a scholarship of $100, known as the Coralie Noyes Kenfield Scholarship for Teachers Training Courses for Teachers of Hard-of-Hearing Adults, is available for a prospective hard-of-hearing teacher. Applications should be submitted before March 1, 1950, to the Society at 17 14th Street N. W., Washington 5, D. C.

* * *

Drs. C. F. Lake and C. W. Rucker attended a meeting of the Sioux Valley Eye, Ear, Nose and Throat Academy late in January; the former presenting a paper: "Mucoceles and Pyoceles of the Frontal and Ethmoid Paranasal Sinuses"; the latter giving a talk: "Some Affections of the Optic Nerves." Dr. Lake also spoke at the Sioux Valley Medical Association. His paper was entitled "Diagnosis of Chronic Sinusitis."



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Among the thirty-eight Minnesota physicians attending the Center for Continuation Study, at the University of Minnesota, course for specialists in ophthalmology were the following: Dr. Joseph Benedict Gaida, St. Cloud; Dr. Reginald Salter of Minneapolis; Dr. Ervin Thaddeus Rechlitz of Albert Lea; Drs. George L. Loomis and F. J. Vollmer, Winona; Dr. M. E. Mosby of the Long Prairie Clinic; Dr. T. R. Fritsche of New Ulm.

* * *

Late in January it was announced that Dr. M. J. Lester of St. James would begin practice in Madelia in association with Dr. H. E. Coulter. Dr. Lester, a graduate of Macalester College, has attended the University of Louisville in Kentucky, and his internship was completed at the Swedish Hospital in Minneapolis last November. During World War II he served as a pharmacist's mate in the United States Navy.

* * *

Elected as a member of the Inter-urban Academy of Medicine of Duluth and Superior late in January was Dr. Ralph Papermaster of Two Harbors. The Academy, one of the oldest of its kind in the United States, has been in existence since 1894. Dr. Peterson, a member of the staff at both St. Luke's and St. Mary's Hospitals, also serves as staff member at the Two Harbors Hospital.

* * *

At the University of Minnesota's Center for Continuation Study, February 17 and 18, classes were held for lay students concerning the latest developments in cancer. Heading the faculty for the school were Dr. Arthur H. Wells of Duluth, president of the Minnesota Division of the American Cancer Society, and Dr. Harold S. Diehl, dean of the Medical School at the University of Minnesota.

* * *

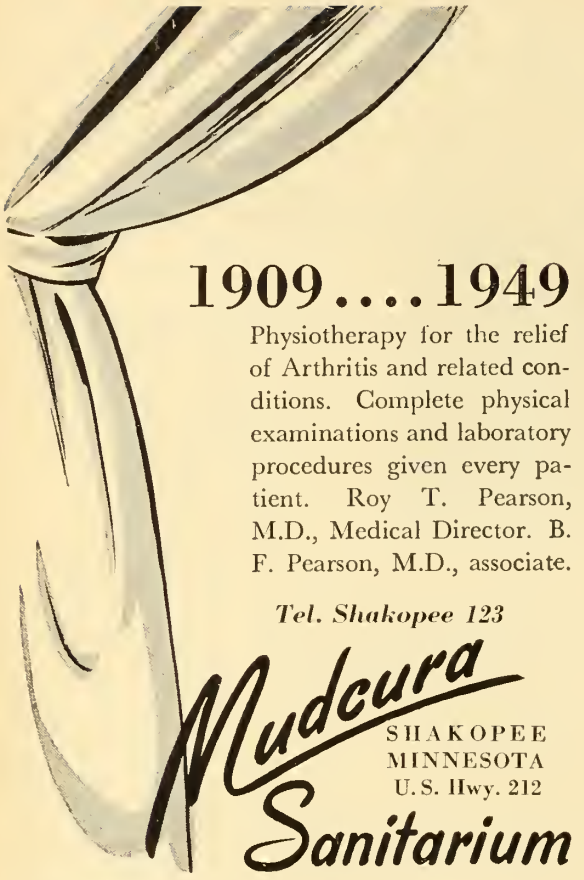
Speaking on "Tuberculosis and Its Control," Dr. Karl Pfuetze, Superintendent of the Mineral Springs Sanatorium at Cannon Falls, recently addressed a public meeting sponsored by the Dakota County Nursing Service jointly with the Lakeville Health Council, at Lakeville. The talk was preliminary to a county-wide Mantoux testing program which will begin this spring.

* * *

Speaking at the thirty-ninth annual dinner of the Jewish Family and Children's Service on January 12 was Dr. Maurice Walsh, psychiatric consultant to the United States Surgeon General. Dr. Walsh spoke on "Family Problems and Their Effect on the Children in the Home." Known for founding the counseling clinic in Rochester, Dr. Walsh has been a member of the Mayo staff since 1934.

* * *

Attending the courses at the Center for Continuation Study at the University of Minnesota on Heart Disease, which were offered during February, were Dr. and Mrs. A. R. Reff of Crookston. Lecturing at the Center were Dr. Paul F. Dwan of Minneapolis, president of the Minnesota Heart Association, and Dr. George Aagaard, acting director of Postgraduate Medical Education at the University. Discussion centered around the use of dicumarol and heparin drugs.



The United Public Health League, organized among a group of northwestern states several years ago, has been maintaining a Washington office for the observation of political trends of medical interest and the dissemination of news in its Washington Letter. With the expansion of the AMA office in Washington, the need for this additional office ceases, and it has been closed. The organization will continue to operate, however.

* * *

From Arlington, Virginia, has come the announcement that Dr. Alvin B. C. Knudson, Washington, D. C., was recently appointed Chief of the Physical Medicine Rehabilitation Division, Department of Medicine and Surgery, Central Office of the Veterans Administration. Dr. Knudson is a graduate of the University of Minnesota Medical School; he later took postgraduate work in Physical Medicine at the Mayo Clinic and the Massachusetts Institute of Technology.

* * *

According to a recent report by Dr. Frank G. Dickinson, director of the Bureau of Medical Economic Research of the AMA, there were some 199,755 living physicians in the United States on June 1, 1948. This is 17 per cent more than the 170,163 physicians shown in the 1940 AMA Directory. The population of the country has increased only 12 per cent since 1940. The physicians in Minnesota number about 4,263, as compared with 30,970 in New York, 16,069 in California and 13,307 in Illinois.

* * *

Dr. H. F. Helmholtz of Rochester spoke before the Northwest Pediatric Society in St. Paul in January, presenting a paper entitled "After-Effects of War on Children in Europe." On the previous day, Dr. Helmholtz addressed the Milwaukee Academy of Medicine, speaking on "A Year in Europe with the United Nations International Children's Emergency Fund." During the first weeks in January, also, Dr. Helmholtz spoke to the Junior Red Cross Leadership Training Institute in Minneapolis on "Health Problems of Children Overseas."

* * *

Dr. Clarke W. Mangun, Jr., a senior assistant surgeon with the Public Health Service, has been assigned to the Minnesota State Health Department to assist in the tuberculosis control work in the Twin Cities. He has had experience in the state health departments in Florida and Kentucky, and recently he received a Master's Degree in public health at Columbia University, New York. His activities here will be directed toward improving the services available to physicians in keeping tuberculosis patients under control.

* * *

It was announced on January 20 that Dr. Manley F. Juergens of Minneapolis had joined the staff of the Johnson-Haberle Clinic in Minneapolis. While with the clinic, Dr. Juergens will specialize in internal medicine and x-ray. Recently Dr. Juergens was associated with Dr. A. E. Walch of Minneapolis, before which he served with the army medical corps for two years. A graduate of the University of Minnesota Medical School in 1945, he served his internship with the Minneapolis General Hospital.

* * *

A new journal, *Fertility and Sterility,* to be sponsored by the American Society for the Study of Sterility and to be published by Paul B. Hoeber, Inc., will appear shortly. Dr. Pendleton Tompkins of San Francisco is the editor and Dr. Abner I. Weisman of New York is managing editor. Twenty distinguished authorities will constitute the advisory board. The journal will be published bi-monthly. Original papers on current topics should be sent to: Dr. P. Tompkins, 450 Sutter Street, San Francisco 8, California.

* * *

Three physicians from Rochester who attended and participated in a meeting of the American Academy of Orthopaedic Surgeons in Chicago were: Dr. M. B. Coventry, who gave a paper entitled "Embryology of the Musculoskeletal System"; Dr. R. K. Ghormley who acted as chairman of the Committee on Graduate Education and Training in Orthopaedic Surgery and the Joint Committee to Study Postgraduate Training; and Dr. H. W. Meyerding who presented an exhibit and delivered an address to the International Society for the Welfare of Cripples.

* * *

On January 19, Dr. W. C. Alvarez of Rochester addressed the Los Angeles County Medical Association

Research Foundation on the subject, "The Importance of Research in Medicine." Later that same week, Dr. Alvarez presented a paper, "The Heredity of Nervous Diseases" to the Western Society for Psychosomatic Medicine in Beverly Hills, California. Speaking also before the Indiana Academy of General Practice later in February, Dr. Alvarez presented to his Indianapolis audience the paper "Puzzling Functional Troubles Found in Practice."

* * *

Two members of the Mayo Clinic have resigned their positions to enter private practice: Dr. P. H. Heersema plans to locate in Minneapolis; Dr. M. P. Kelsey, in Houston, Texas.

Dr. Heersema entered the Mayo Foundation in 1937, being appointed to the staff later in 1939. A consultant in a section on neurology, he was also an instructor in neurology and psychiatry.

Dr. Kelsey was appointed to the staff in 1937. After his service with the Medical Corps during the war, he returned to the Foundation as a consultant in medicine.

* * *

Dr. Vernon A. Doms has recently joined the medical staff of three physicians at the Slayton Clinic, which is to open shortly. Dr. Doms, a native of Woodstock, is the nephew of Dr. H. C. Doms of Slayton. Dr. Doms received his premedical training at Macalester College in St. Paul, taking his medical degree at the University of Minnesota Medical School. His internship was completed while he served with the United States Navy, at the United States Naval Hospital, the Columbus and Providence Hospitals in Seattle, Washington.

Other members of the Slayton Clinic staff are: Drs. O. A. Wiseness, a classmate of Dr. Doms, Dr. Roy Pierson, and Dr. C. Doms.

* * *

On January 16, Mr. and Mrs. A. F. Wellsley, St. Paul, announced the engagement of their daughter, Joyce Mary, to Dr. James P. Lillehei, son of Dr. and Mrs. C. I. Lillehei, Edina. No date, as yet, has been set for the wedding. Both Miss Wellsley and Dr. Lillehei are graduates of the University of Minnesota. She took her Bachelor of Arts degree in speech pathology, while Dr. Lillehei attended the University of Minnesota Medical School. He is, at present, completing his internship at Minneapolis General Hospital before going into residency at the University Hospitals.

* * *

In Easton on February 7, Dr. John J. McGroarty celebrated his sixty-ninth birthday and his fortieth year as a physician. His memory easily encompasses the horse and buggy doctor days; and, further, he is able to recall the time when St. Paul was a town of one house and Minneapolis was a town of three. Educated at secondary schools in the Inver Grove township, Dr. McGroarty attended St. Thomas College and the University of Minnesota Medical School, receiving his degree in 1907. His internship was completed at Ancker Hospital in 1908, from whence he traveled to Easton, establishing his practice there in 1909.

* * *

General physicians from smaller cities and towns throughout Minnesota attended a three-day course in cancer, March 3-5, at the University of Minnesota's Center for Continuation Study in Minneapolis.

The course, covering the latest developments in the diagnosis and treatment of cancer, was offered by the University with the co-operation of the Minnesota State Medical Association, the Minnesota division of the American Cancer Society and the State Department of Health.

Speakers included Dr. Ira T. Nathanson, member of the Harvard Cancer Commission and assistant professor of surgery in the Harvard Medical School; Dr. David P. Anderson of the Austin Clinic at Austin, Minnesota; Dr. John R. McDonald, associate professor of pathology with the University's Mayo Foundation in Rochester, and other specialists in cancer from the University's medical faculty.

* * *

Dr. F. A. Figi of Rochester gave three papers during the month of February: two, "Benign Tumors of the Nose and Throat" and "Malignant Tumors of the Nose and Accessory Sinuses," were given before the Memphis Society of Opthalmology and Otolaryngology. The other, delivered before the Mid-South Postgraduate Medical Assembly, was entitled "Malignant Tumors of the Pharynx and Larynx." Both meetings took place in Memphis, Tennessee.

Dr. Figi assumed his duties as President of the Ameri-



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can Association of Plastic Surgeons in January, pursuant to his election to that post after the annual meeting last May.

* * *

Two special medical lectures, open to the public, were presented March 2 and 3 at the University of Minnesota.

Wednesday, March 2, Dr. E. T. Bell, professor of pathology at the University, spoke on the "Pathology of Diabetes" in the auditorium of the Minnesota Museum of Natural History. Dr. Bell's talk was delivered under the Dr. Clarence M. Jackson lectureship, established as a memorial to the late University anatomist.

Dr. Ira T. Nathanson of Boston, gave the George Chase Christian Lecture on March 3 in the medical sciences amphitheater at the University. Dr. Nathanson spoke on "Hormonal Alteration of Advanced Cancer of the Breast." In addition to his work at Harvard, Dr. Nathanson is associated with the Massachusetts General Hospital, Pondville Hospital and the Huntington Memorial Laboratories.

* * *

In observance of University of Minnesota Week (February 14-21), the University's 98th birthday, many Minnesota physicians co-operated in a special convocation at Northrop Auditorium, held in recognition of the work that has been done at the University's Medical School and through the University's medical facilities. At the convocation, the physicians of the University paid tribute to Mrs. George Chase Christian, who has been singularly instrumental, by her generosity, in the development of cancer facilities there. Speaking in honor of Mrs. Christian were: Dr. Maurice B. Visscher, head of the the department of physiology; Dr. John J. Bittner, holder of the George Chase Christian professorship for the last six years; Dr. Owen H. Wangensteen, chairman of the department of surgery; Dr. Karl W. Stenstrom, professor of biophysics; Dr. John L. McKelvey, head of gynecology; Dr. Ray M. Amberg, director of hospitals, and Dr. Harold S. Diehl, dean of the University's Medical School. Dr. Diehl expressed the gratitude of the patients and physicians who have benefited from the help offered by Mrs. Christian, presenting her with a "Builder of the Name" award, an award which has been conferred on but two persons previously.

HOSPITAL NEWS

According to a recent announcement of the Minnesota Hospital Association, salaries of hospital employes increased 10 per cent in 1948 over 1947. The average starting salary of general duty nurses is $204 per month, an increase of $49 over 1945 and $17 over the 1947 average. Clerks receive an average of $140; and practical nurses, $145, as compared with $132 for 1947. Salaries and employe maintenance service constitute over half the total hospital expenditures.

* * *

As of February first, the charges for services at Ancker Hospital in St. Paul went up "as an effect of the rising cost of hospital maintenance and operation," the welfare board announced. Ambulance charges and operating room fees also rose, the price of rooms on the tuberculosis ward, however, remaining the same. The general rate of advance is $1.00 a day for rooms; $6.50 a day for rooms in contagion sections one and two; $7.50 a day for double bedrooms up to ward beds in contagion sections three and four; and $8.50 per day for single rooms in the same sections. The rates for the operating room range now from $10.00 to $35.00, and the new ambulance charge is $10.00 instead of $5.00.

* * *

Dr. Deane W. Benton, formerly of Long Beach, California, has joined the staff of the Worthington Clinic Hospital as general practitioner. Previous to his nine months' residence in California, Dr. Benton practiced in New Ulm. Before that, he served with the armed forces. Dr. Benton and his family have established their new residence at 203 West Ninth Avenue in Worthington.

* * *

At the annual staff meeting of St. Luke's Hospital, Duluth, Dr. S. E. Uberg was named chief of staff, succeeding Dr. Gordon C. MacRae.

Also named as officers were: Dr. P. F. Eckman, vice chief, succeeding Dr. Uberg; Dr. R. C. Pedersen, secretary; Dr. W. R. Bagley, chief of surgery; Dr. S. H. Boyer, Jr., chief of medicine; Dr. P. N. Bray, chief of obstetrics; Dr. S. N. Litman, chief of pediatrics; Dr. K. R. Fawcett, chief of eye, ear, nose and throat; Dr. M. H. Tibbetts, chief of orthopedics; Dr. W. E. Hatch, chief of urology; Dr. G. Doyle, chief of dermatology; Dr. A. L. Abraham, chief of x-ray; Dr. A. H.



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Wells, chief of laboratories; Dr. F. C. Jacobson, anesthesiology.

Dr. George A. Young, Jr., professor of medicine and psychodynamics at the University of Nebraska, delivered the principal talk at the annual staff meeting.

* * *

The annual staff meeting of St. Mary's Hospital, Duluth, was held February 3, Dr. C. O. Kohlbry, chief of staff, presiding. Following the election of officers and the administrator's report on hospital activities, Dr. John Hirschboeck, dean of the Marquette University Medical School in Milwaukee, spoke on "Present Trends in Medical Education."

* * *

Dr. G. E. Cardle of Brainerd has been elected chief of staff at St. John's Hospital, it was announced in January. Dr. Cardle, succeeding Dr. W. E. Fitzsimons, will hold office through 1949.

The annual banquet, which was held January 14, also marked the election of Dr. A. M. Mulligan as chief of staff to succeed Dr. Cardle; and Dr. J. H. Bebder was elected secretary-treasurer to succeed Dr. Mulligan. Dr. W. W. Will, Bertha, and Dr. E. J. Simons, Swanville, spoke on socialized medicine.

* * *

Dr. Karl Johnson has been elected chief of staff at Miller Hospital, Duluth, for the coming year, succeeding Dr. Keith Fawcett. Also named as officers were: Dr. Miriam Fredricks, vice chief of staff, and Dr. Earl Barrett, secretary. Elected as members of the Executive Committee were Dr. Fawcett and Dr. Henry Jeronimus. Dr. Mario Fischer was elected ex-officio member.

Lecturing on Russia's "Aims and Dreams" was Dr. R. J. Peiper of the Duluth Branch of the University of Minnesota.

* * *

Elected as chief of staff of the Eitel Hospital recently was Dr. James Blake of Hopkins who succeeds Dr. Wallace Nelson of Minneapolis. Dr. Alton C. Olson, Minneapolis, was elected as assistant chief of staff, succeeding Dr. Alfred Baker. Re-elected as secretary was Dr. Melvin B. Sinyken.

* * *

At the annual staff meeting of the Loretto Hospital, New Ulm, Dr. O. J. Seifert was elected chief of staff. The same honor was bestowed on Dr. Carl J. Fritsche at the Union Hospital annual staff meeting in the same locale.

Receiving secondary posts at Loretto Hospital were: Dr. Wm. A. Black, vice president, and Dr. Albert Fritsche, secretary. Comparable posts at the Union Hospital were accepted by Dr. Theodore R. Fritsche and Dr. F. H. Dubbe, respectively.

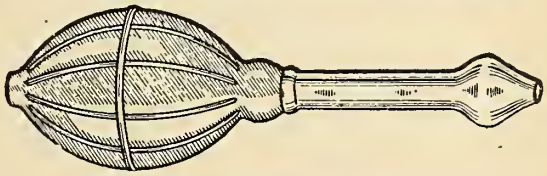
* * *

Named as chief of staff at St. Barnabas Hospital, Minneapolis, on February 8 was Dr. Clarence E. Arlander of Minneapolis who has served with the staff since 1936. Dr. Arthur C. Kerkof was elected vice chairman; Dr. Edgar A. Webb, secretary. Dr. Owen F. Robbins, the retiring chairman, will retain his duties as a member of the Executive Committee.

* * *

St. Mary's Hospital in Detroit Lakes, a hospital of sixty beds and fifteen bassinets, was approved during the week of February 3 by the American College of Surgeons. One of nearly 80 per cent of American hospitals to be approved, St. Mary's has been praised for her efficiency and progress in organization and control. Notable among the hospital's accomplishments have been the improvement of working conditions and the reduction of the hospital death rate from approximately 50 per cent down to 3 or 4 per cent at the present time.

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At the annual meeting of the Red Wing City Hospital, it was proposed that a project of unity be undertaken between the City Hospital and St. John's Hospital, which is situated in Red Wing also. Most local doctors work in both hospitals; thus, it was asserted, a sharing of skilled hospital specialists by the two institutions would greatly facilitate the service to the public.

As regular business of the meeting, the election of staff officers was held. Dr. R. V. Sherman was elected president of the medical staff. He holds the position of secretary at St. John's Hospital also. Elected as vice president was Dr. L. A. Steffens; as secretary, Dr. J. F. Brusegard; and as members of the Executive Committee, Drs. R. B. Braves, R. F. Hedin, and W. W. Liffring.

* * *

Miller Hospital in St. Paul has accepted its first woman intern—Dr. Regine Arnow, a graduate of the University of Minnesota Medical School last June. Dr. Arnow plans to be married shortly to John T. Hoag, a graduate of the University of Michigan Law School, following which she hopes to enter the Children's Hospital in Detroit to serve her residency.

* * *

The Children's Hospital in St. Paul marked its twenty-fifth anniversary early this year. The hospital, now affiliated with the Graduate School of the University of Minnesota, a handsome modern building, began its life in a comparatively unattractive manner. Dr. Walter Ramsey, medical director, saw the need many years ago for an institution which could care for the Northwest's tuberculous children. He had seen such an institution successfully and beneficially operated in Switzerland, and was determined, thereby, to serve the same need here. The financial problem was alleviated but slightly, however, by an unconvinced St. Paul. In 1924, Dr. Ramsey opened a fifteen-bed hospital in an old frame house, paying for the enterprise with funds donated by the few persons who had faith in the project. It was merely a matter of months before the idea proved itself to be a good one. Consequently, in 1927 the present building was constructed. In 1944 another wing was added; and this hospital has the present distinction of being the only one in the Northwest to care for children's diseases from birth to adolescence.

* * *

Dr. John Hirschboeck, dean of Marquette University Medical School, spoke last month at the annual staff meeting of St. Mary's Hospital, Duluth, to the effect that medical schools are carrying the burden of an enlarged enrollment which will not be relieved until the G.I. physicians are graduated and the regular rate of trainees is re-established. He stressed also that the need for medical men necessitated such overcrowding.

Election of officers resulted as follows: Named as chief of staff was Dr. M. A. Nicholson, succeeding Dr. C. O. Kohlbry. Dr. R. P. Buckley was elected chief of staff-elect, and Dr. R. H. La Bree, secretary. Dr. A. J. Spang was named chief of surgery; Dr. R. E. Nutting, pediatrics; Dr. E. L. Touhy, laboratories; Dr. C. W. Taylor, communicable diseases; Dr. Archie Olson, eye, ear, nose and throat; Dr. P. G. Bowman, medicine; Dr. A. O. Swensen, obstetrics; Dr. F. H. Elias, orthopedics; Dr. O. E. Sarff, urology; and Dr. F. T. Becker, dermatology.

* * *

The new hospital at Ely, Minnesota, is rather unique in that its past includes thirty-four years of serving as a school building, and, recently, a thorough-going remodeling job was done in large part by volunteer labor on the part of Ely and Winton citizens eager to have a local hospital. The new institution is the materialization of many years of planning and working on the part of Dr. O. E. Snyker of Ely.

It is a forty-bed hospital, equipped with modern facilities, with much of the present equipment a carry-over from the building's old school days: the bookcases are now supply shelves; and much of the furnishing is material which was salvaged from the War Assets Administration. Work which had to be done at cost was paid for, largely, by donations—small and large—made by local citizens, many of whom have been educated in the building.

Dr. Snyker's medical career began at the University of Minnesota Medical School and his medical training was completed at Loyola University in Illinois, where he graduated in 1934. During the last war, Dr. Snyker served as a Flight Surgeon in the European theatre—at which time, he states, the details of his hospital plan were worked out.

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BLUE SHIELD NEWS

Blue Shield Participants Subscribers covered by contracts in effect as of January 31, 1949.....115,968
(Figures used for previous reports were for Blue Shield applications received as of a given date. The present figure reports persons covered by contracts actually in effect.)
Blue Shield cases paid from January 1 to January 31, 1949..1,522
Amount paid on Blue Shield cases from January 1 to January 31, 1949.....$56,561.68

During the past few months the Blue Shield office has received an increasing number of inquiries from its subscribers requesting information on the benefits provided by the Blue Shield contract and the procedure for filing claims for these benefits. The usual tone of such inquiries is that the attending physician has told the patient to call the Blue Shield office for this information. It is realized that the furnishing of such information is partially the responsibility of Blue Shield office personnel and telephone calls emanating from local subscribers are easily and satisfactorily answered.

However, the out-of-town subscribers have rather a different problem in that they either must write to the Blue Shield office for information or obtain it from the local doctor or the doctor's office personnel. If the information obtained from the doctor's office is insufficient, the patient may get the idea that the Blue Shield contract is not particularly valuable; therefore, there is no need for the potential subscriber to join Blue Shield, nor for the present subscriber to continue his Blue Shield contract. It holds true now just as much as it always has in the past that the doctor is a leading citizen in his community and is looked upon as an oracle on all subjects. Few people remember that the doctor is a very busy man and perhaps does not have the time to read every piece of literature coming into his office, including Blue Shield literature.

Recently, on a trip around the state, a few examples of erroneous information were brought out. However, the opportunity to correct this information was welcomed, and it was also a very great pleasure to learn that the greater percentage of the doctors were well informed on the Blue Shield plan.

As a review, the remainder of this article is devoted to the benefits a Blue Shield subscriber receives and also to some pointers on the processing of medical claims.

Medical care, as distinguished from surgery or maternity care, is provided only if the patient is hospitalized to receive this care. Benefits will be allowed up to twenty-one days in any twelve-month period for the treatment of the same condition. No benefits are allowed for medical care in the doctor's office, the clinic, or the patient's home.

Benefits for surgery are provided regardless of where it is performed, the doctor's office, the patient's home, in the hospital out-patient department, or in the hospital. This also holds true in the setting of fractures, the manipulation of dislocations, the application of casts for corrective purposes, any casts applied to a fracture other than the initial one, the suturing of lacerations, debridement of burns, and skin grafts.

Benefits for obstetrical deliveries are allowed either at home or in the hospital, if the mother is covered by a family Blue Shield contract that has been in effect for ten consecutive months. The Blue Shield allowance of $50.00 for a normal delivery or $100.00 for a cesarean section is only for the delivery and care of the mother and child during the period of confinement. The doctor is at liberty to charge for any prenatal care or postnatal care not covered by this allowance.

Benefits for x-rays up to $15.00 are allowed if taken by or under the supervision of a doctor of medicine who is not compensated by a hospital, and if related to medical, surgical, or obstetrical services covered by the Blue Shield contract.

Payment is made for the administering of anesthesia when given by a doctor of medicine who is other than the surgeon and also is not a salaried hospital employe.

Benefits are provided for tonsillectomies and adenoidectomies performed on minor dependents covered by a

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SURGERY—Intensive Course in Surgical Technique, two weeks, starting March 21, April 18, May 16.
Surgical Technique, Surgical Anatomy and Clinical Surgery, four weeks, starting March 7, April 4, May 2.
Surgical Anatomy and Clinical Surgery, two weeks, starting March 21, April 18, May 16.
Surgery of Colon and Rectum, one week, starting March 7, April 11.
Esophageal Surgery, one week, starting June 13.
Thoracic Surgery, one week, starting June 20.
Breast and Thyroid Surgery, one week, starting June 27.
GYNECOLOGY—Intensive Course, two weeks, starting March 21, April 18, June 20.
Vaginal Approach to Pelvic Surgery, one week, starting April 4, May 16.
OBSTETRICS—Intensive Course, two weeks, starting March 7, April 4.
MEDICINE—Intensive Course, two weeks, starting April 4.
Electrocardiography and Heart Disease, four weeks, starting March 16.
Personal Course in Gastroscopy, two weeks, starting March 7, May 16.
Diagnosis and Treatment of Congenital Malformation of Heart, two weeks, starting June 13.
PEDIATRICS—Intensive Course, two weeks, starting April 4.
DERMATOLOGY—Formal Course, two weeks, starting May 2.
CYSTOSCOPY—Ten-Day Practical Course every two weeks.
UROLOGY—Intensive Course, two weeks, starting April 18.

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family contract, provided that contract has been in effect for ten consecutive months. Persons covered as a single subscriber do not have a waiting period for this type of surgery since it is possible that a person under nineteen years of age may be employed and thus have his own Blue Shield contract. In these cases there is not the ten-month waiting period requirement for tonsillectomies. Maternity benefits, however, would not be allowed for a single subscriber contract.

A few tips—Blue Shield payments are made every Friday on cases received the previous week. Thus the greater percentage of cases are paid in less than two weeks from the patient's discharge.

When completing the Blue Shield forms, please describe the extent of surgery whether simple or compound, sub-total or total, unilateral or bilateral. This added information helps expedite the case.

If in doubt on a case, send the information to the Blue Shield office, and it will be given consideration with the thought in mind of giving the subscriber the maximum allowance provided by his contract.

Every physician is familiar with the processing of Blue Shield claims for hospitalized patients, the claim being originated in the Blue Shield office and sent to the attending physician for necessary information and return. However, for patients treated outside the hospital, it is the doctor's responsibility to initiate the report and submit it to the Blue Shield office. Every effort is made to keep a supply of these forms in the doctors' offices. An additional supply will be distributed in the very near future.

Recently the question of Blue Shield-Blue Cross providing benefits for diagnostic work performed in the hospital Out-Patient Department has come up. Blue Cross will make no allowance for any hospital expense incurred for diagnostic work on a non-hospitalized patient, nor would any Blue Shield allowance be made for the services of a doctor of medicine in this diagnostic procedure since such services would be classified as medical care rendered to a non-hospitalized patient. However, if the attending physician feels that the patient should be hospitalized for diagnostic study, observation, et cetera, Blue Cross would make its usual allowance for hospital services. The attending physician will also receive Blue Shield benefits for the medical care rendered the patient while hospitalized.

The Blue Shield office will be glad to supply any additional information, and in the event any professional group or county medical society desires a representative of the Blue Shield office at any meeting, such personnel will be readily available.

The strength of Minnesota Medical Service, Inc., lies with its originators, the medical doctors of Minnesota. Their assistance in helping to keep the Blue Shield subscriber fully informed and aware of Blue Shield's value will assure its continued success.

TELEPHONED NARCOTIC ORDERS

(Continued from Page 292)

the person filling such an order, as well as the person issuing it, may be charged with violation of the law.

6. Addiction alone is not recognized as an incurable disease. It is well established that the ordinary case of addiction yields to proper treatment, and that addicts can remain permanently cured when drug taking is stopped and they are otherwise physically restored to health. The so-called reductive ambulatory treatment of addiction has never been sanctioned or approved for the reason that when the addict controls the dosage he will not be benefited or cured.

7. Treatment of addiction, with a view to effecting a cure, which makes no provision for confinement while the drug is being withdrawn, is a failure, except in a relatively small number of cases where the addict is possessed of a much greater degree of will power than that of the ordinary addict.

CANCER FILMS AVAILABLE

The Minnesota Division, American Cancer Society, has announced the purchase of a new film for professional audiences entitled "Cancer . . . The Problem of Early Diagnosis." This film, which is the first in a series, is designed to show that the family physician offers the only immediate hope of reducing the annual toll of more than 180,000 deaths from cancer. Five succeeding films will give more detailed treatment to breast, intra-oral, lung and esophageal, gastro-intestinal, and skin cancer. The series is sponsored jointly by the American Cancer Society and the National Cancer Institute of the U. S. Public Health Service.

A review of this film appeared in the January 20 issue of the *Journal of the American Medical Association,* page 328. It is now available to professional groups on a free loan basis. Bookings will be arranged in their order of receipt in the office of the Minnesota Division, 622 Commerce Building, Saint Paul 1, Minnesota.



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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

HANDBOOK OF DISEASES OF THE SKIN. Richard L. Sutton, M.D., Emeritus Professor of Dermatology and Syphilology, University of Kansas Medical School, and Richard L. Sutton, Jr., M.D., Associate Professor of Dermatology and Syphilology, University of Kansas Medical School. 749 pages. Illus. Price, $12.50, cloth. St. Louis: C. V. Mosby Co., 1949.

LES MÉTRITES DU COL. Etude Anatomo-Clinique. Nouveaux Traitments. Pierre Durel, Médicin de l'Hôspital Saint-Lazare. Collaborators, Lucien Dutheil, Ancien interne de'Hôspital Saint-Lazare, and Hubert Autrand, Ingénieur, I.E.N. 332 pages. Illus. Price, 650 fr., paper cover. Paris: Masson et cie, Editeurs, 1949.

PREMATURE INFANTS. A Manual for Physicians. Children's Bureau Publication No. 325. Ethel C. Dunham, M.D. 401 pages. Illus. Price, $1.25, paper cover. Washington: Government Printing Office, 1948.

HUMAN RELATIONSHIPS IN PUBLIC HEALTH. A Report of an Institute on Mental Health in Public Health. Geddes Smith. 18 pages. Price, 15c, paper cover. New York: Commonwealth Fund, 1949.

DOCTORS OF INFAMY. The Story of the Nazi medical crimes. Alexander Mitscherlich, M.D., Head of the German Medical Commission to Military Tribunal No. 1, Nuremberg, and Fred Mielke. Translated by Heinz Norden. 172 pages. Illus. Price $3.00, cloth. New York: Henry Schuman, 1949.

CAMPBELL'S OPERATIVE ORTHOPEDICS. Second Edition. J. S. Speed, M.D., editor; Hugh Smith, M.D., associate editor. 2 vols., 1643 pages. Illus. Price $30.00, cloth. St. Louis: C. V. Mosby Co., 1949.

SAFEGUARDING MOTHERHOOD. Sol T. DeLee, M.D. Clinical Instructor of Obstetrics and Gynecology, University of Illinois; Attending Obstetrician at Chicago Maternity Center; Former Associate in Obstetrics and Gynecology, Cook County Hospital. 135 pages. Illus. Price $2.00, cloth. Philadelphia: J. B. Lippincott Co., 1949.

CLINICAL CASE-TAKING. Fourth Edition. George R. Herrmann, M.D., Ph.D., Professor of Medicine, University of Texas. 240 pages. Price, $3.50, cloth. St. Louis: C. V. Mosby Co., 1949.

EMOTIONAL MATURITY; THE DEVELOPMENT AND DYNAMICS OF PERSONALITY. Leon J. Saul, M.A., M.D., Associate Professor of Psychiatry, Temple University School of Medicine; Special Lecturer in Psychiatric Information, Bryn Mawr College. 338 pages. Illus. Price, $5.00. Philadelphia: J. B. Lippincott Co., 1947.

This book of 338 pages, including five pages of references and a nine-page index, deals with the emotional maturity of man. It shows what emotional maturity is, how it is normally achieved, and how its achievement in one respect or another is often prevented or distorted. It shows how important are the early childhood environmental influences, especially in the home. It also shows how the persistence in adult life of immature childish reaction patterns can, under emotional stress, lead to psychoses, neuroses, psychosomatic ailments, and personal or social behavior disorders.

The first half of the book is excellently organized and written. The second half is repetitious in many places, is based too much on military experience during the second world war to be of as great interest to a civilian physician as it might be, and is therefore somewhat of a letdown after having read the first half.

On the whole, the book is well worth reading by any physician who wishes to understand his patients better as persons, rather than just as cases. Also, it is sufficiently understandable for others who deal with people, such as lawyers, ministers, and social workers.

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ANATOMICAL CHARTS. Frank Netter. Summit, New Jersey: Ciba Pharmaceutical Products, 1949. Price $6.50.

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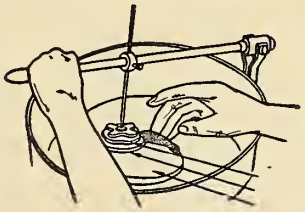
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Minnesota Medicine

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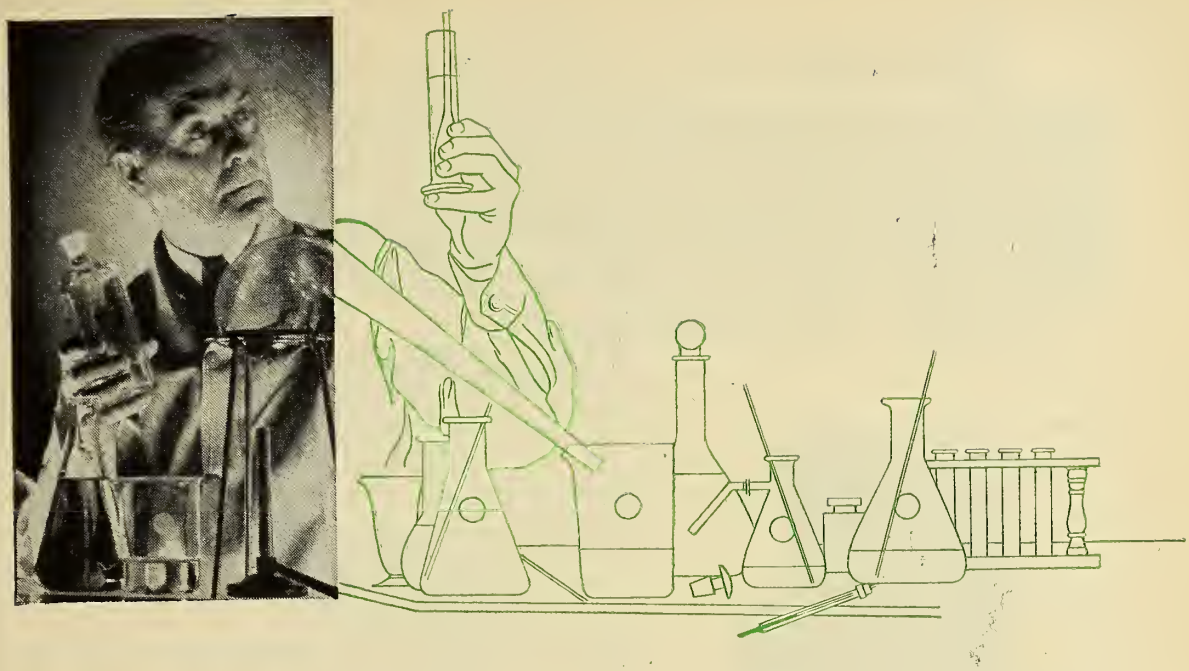
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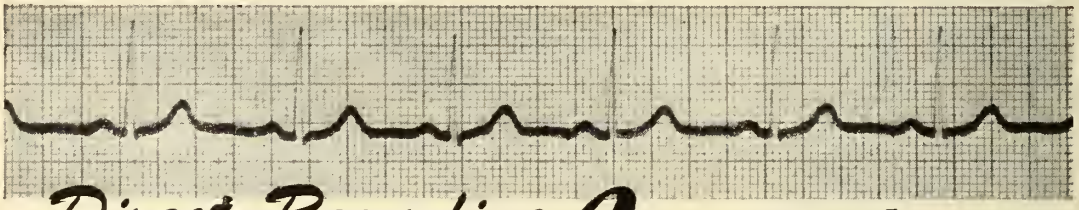
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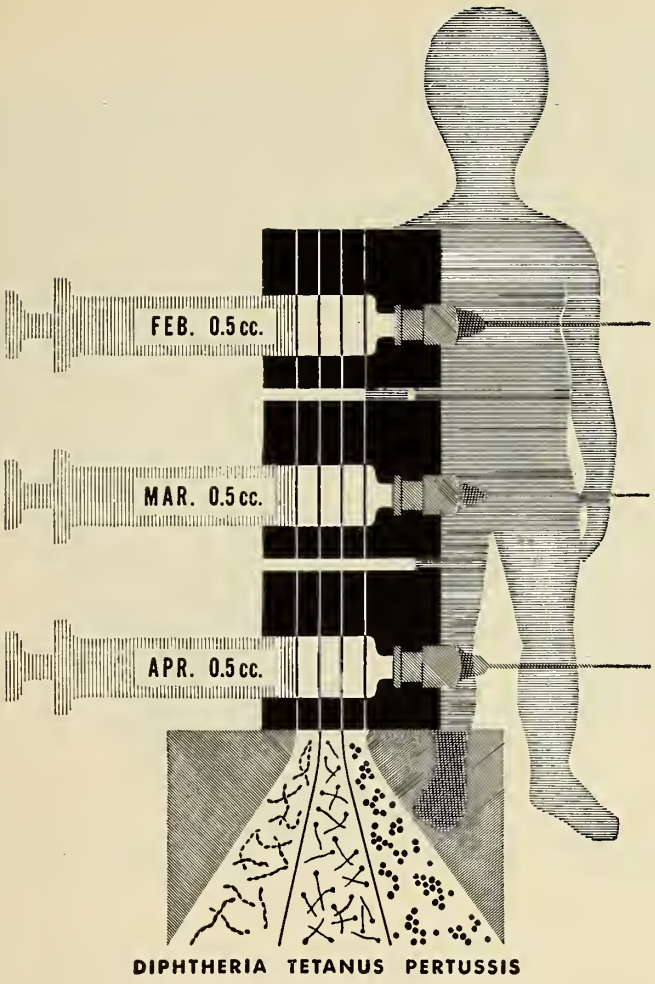
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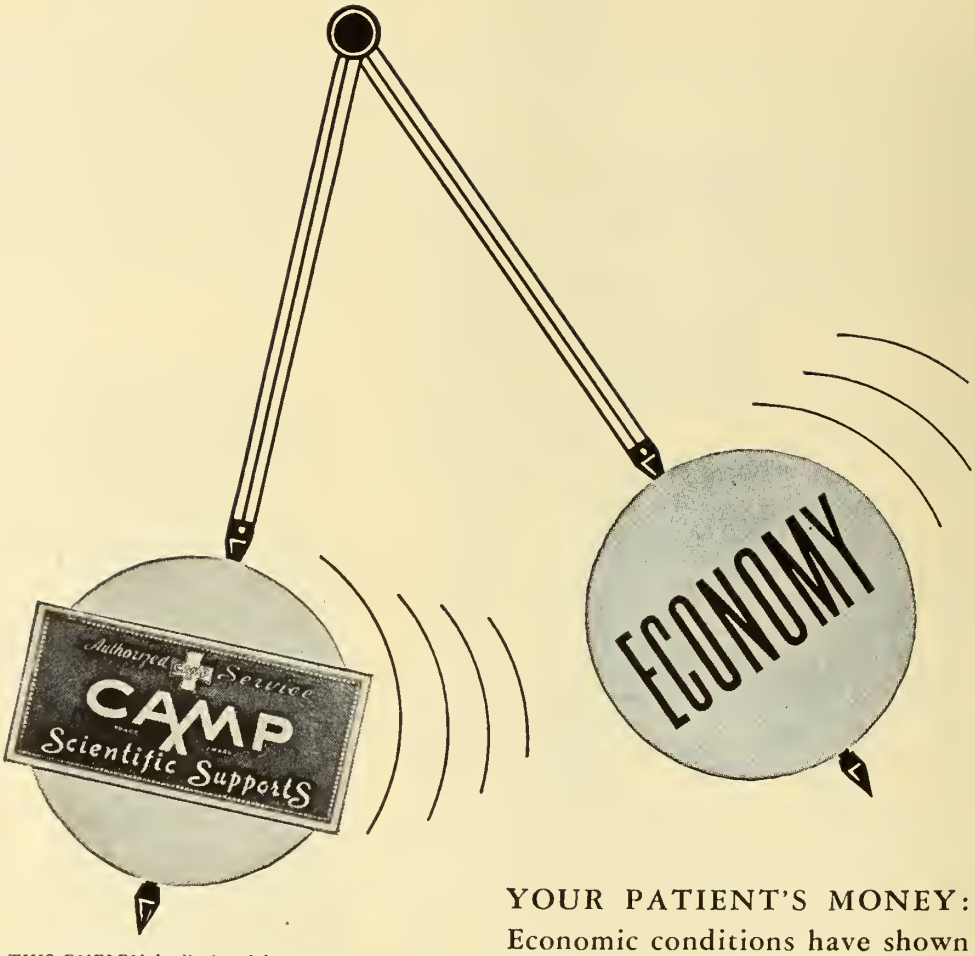
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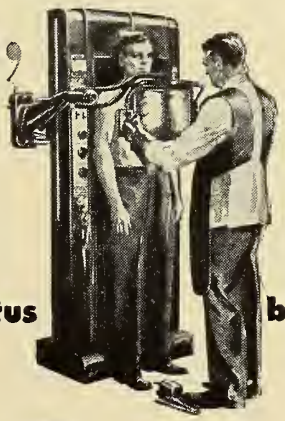
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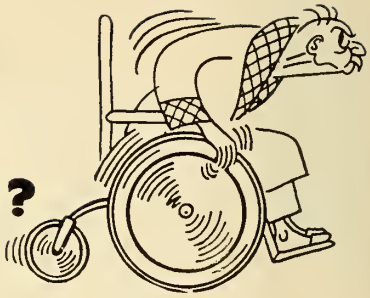
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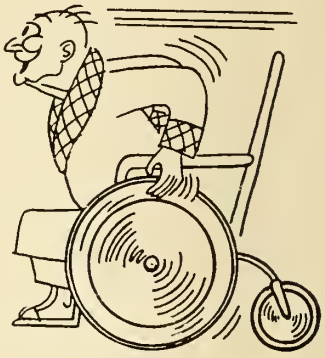


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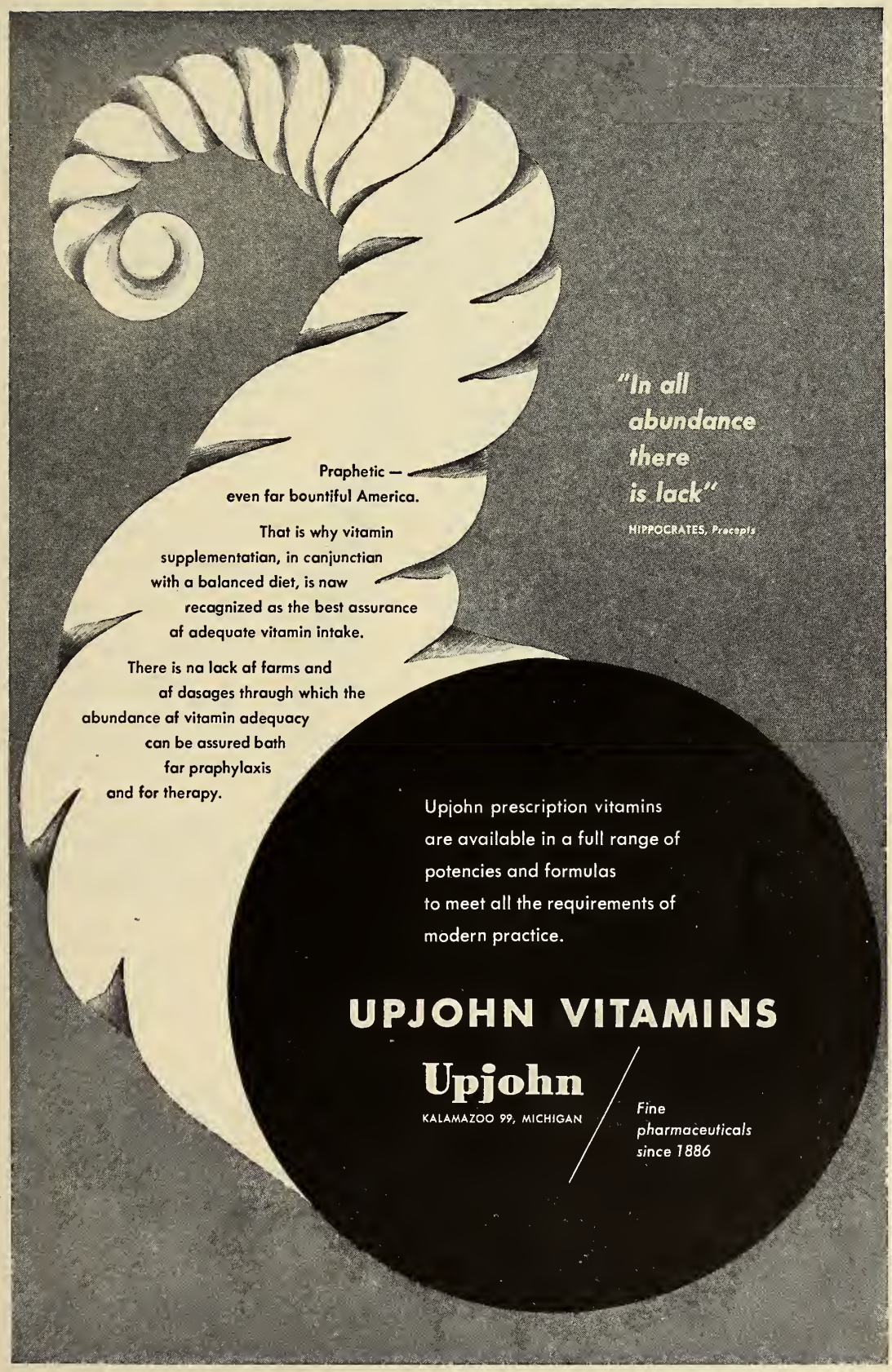
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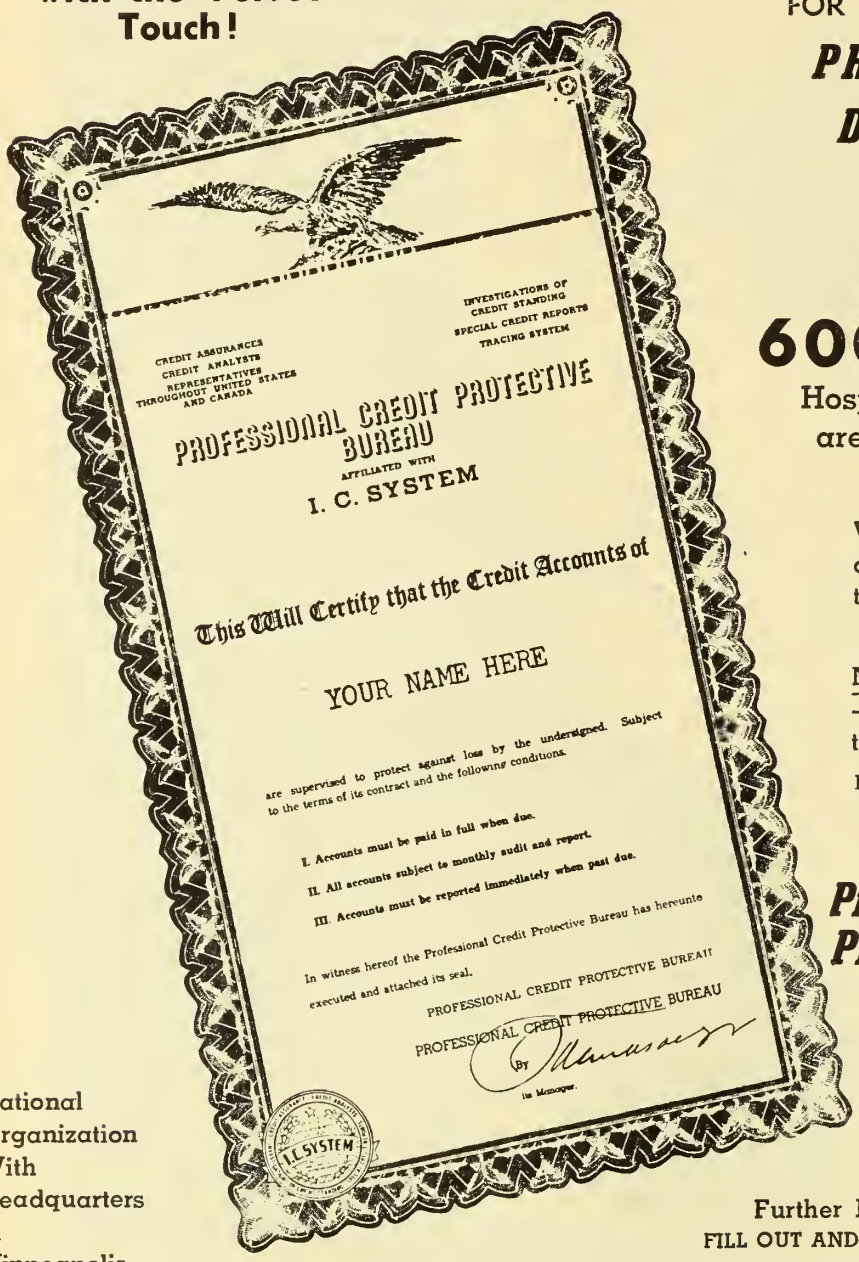


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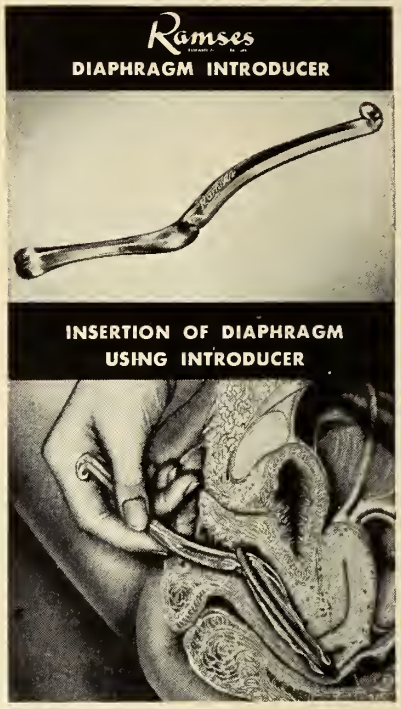
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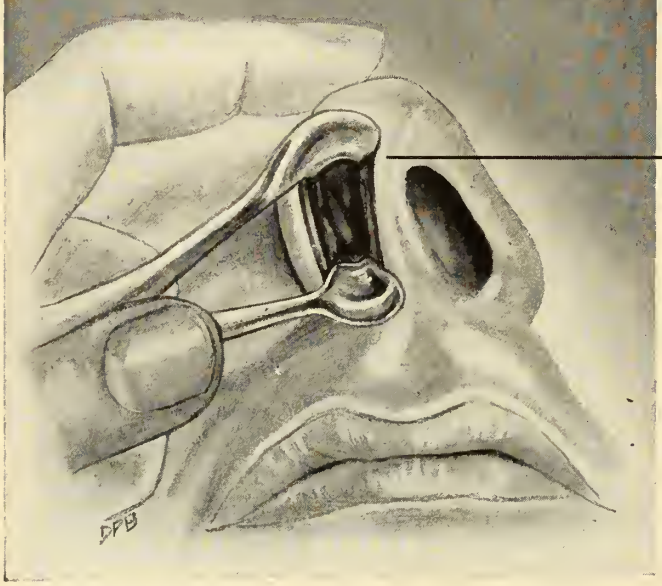
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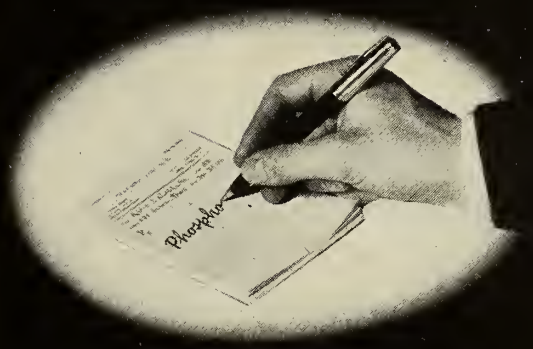
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Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 32 April, 1949 No. 4

POSTOPERATIVE COMPLICATIONS OF THYROIDECTOMY

DONALD C. MACKINNON, M.D., F.A.C.S.
Minneapolis, Minnesota

THIS review will deal with the etiology, symptoms, treatment, and prevention of postoperative complications of thyroidectomy.

These complications may be due to hemorrhage, severe hyperthyroidism, tracheal obstruction, accidental removal of parathyroid glands, accidental injury to the recurrent laryngeal nerves, as well as to the removal of too much or too little thyroid tissue. The circumstances which may produce such a set of complications occur frequently. Moreover, they may be of such serious nature as to result in a permanently disabled patient or in an occasional death. Complications arising in the wound itself are important but are of a less serious nature. When strict attention is given to the improvements in preoperative and postoperative management, and a meticulous operative technique, the complications are, for the most part, avoidable.

Hemorrhage

Hemorrhage is a serious postoperative complication. It may cause sufficient pressure to produce complete tracheal obstruction, asphyxiation, and sudden death. When hemorrhage occurs beneath the skin flap the bleeding is usually venous in origin; but when beneath the sutured prethyroid muscles it is more often arterial in origin.

Hemorrhage under the skin flap may arise from the anterior jugular veins or from any of the small veins encountered in elevating the flap. This type of hemorrhage can be prevented by careful inspection of the wound and by securing accurate hemostasis of the bleeding points before the skin flap is replaced and the wound closed. When the prethyroid muscles are cut transversely the anterior jugular veins are severed (Fig. 1). To prevent severe postoperative hemorrhage from these vessels, a separate suture tie may be applied around them in addition to the mattress sutures employed in approximating the muscles transversely (Fig. 5). Subcutaneous hemorrhage occurs soon after operation, develops gradually, and is rarely of serious consequence. The patient complains of increasing pain in the wound. Inspection of the neck reveals abnormal oozing about the drains, if drains have been used, and a moderately tense bulging of the skin flap, which may be extensive when the hematoma is large. Hemorrhage from one of the anterior jugular veins develops rapidly causing extensive bulging of the skin flap. Unless there are symptoms of tracheal obstruction from pressure of the hematoma, the wound in subcutaneous hemorrhage is not opened at the bedside. Ordinarily there is sufficient time to move the patient immediately to the operating room where the wound is reopened, the blood clot evacuated, the bleeding point ligated, and the skin flap replaced. Hematomas of moderate size, in which the bleeding has stopped, are best evacuated by opening the wound surgically. To attempt evacuation by partially opening the wound, inadequate probing, or trusting that the hematoma will be absorbed eventually will result in delayed wound healing and in excessive scar

Read on January 13, 1948 at the Surgical Staff Seminar of the Minneapolis Veterans Hospital.

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formation. Furthermore, ineffectual probing may introduce infection into the hematoma and result in marked disfigurement of the final goiter scar.

Postoperative hemorrhage beneath the prethyroid muscles of arterial origin is from the superior thyroid artery or from branches of the inferior thyroid artery in the remnant of the thyroid gland. Venous hemorrhage in this location is from the lateral thyroid veins or from their junction with the internal jugular veins. Venous hemorrhage may also occur from the inferior thyroid veins as they leave the inferior pole of the gland, or from injured veins in the depths of a substernal cavity from which a substernal goiter was evacuated. Bleeding points from these areas are overlooked, occasionally, when the wound is closed. Hemorrhage is due to inaccurate ligation of these vessels. The ligature slips off during the strain associated with postoperative coughing or vomiting, and the hemorrhage usually occurs within twelve hours after operation. However, a severe hemorrhage from a branch of the inferior thyroid artery has occurred as late as the eighth postoperative day.

Postoperative hemorrhage beneath the sutured prethyroid muscles is usually arterial in origin and constitutes a hazardous emergency. The life of the patient is threatened with dramatic suddenness. Bulging of the neck is not in evidence as observed when the hemorrhage occurs under the skin flap; rather, the neck is distended, tense, and indurated from hemorrhage into a tightly enclosed fascial space. There is sudden severe pain in the neck, anxiety, and interference with breathing due to tracheal obstruction or collapse. The pressure rapidly increases producing stridor, cyanosis, complete asphyxiation, and death—unless corrective emergency measures are instituted immediately. The interference with breathing develops so rapidly, producing such a hazardous and dramatic situation, that patients who have had a thyroidectomy should never be left with untrained attendants during the immediate postoperative course. These patients should always be observed by assistants or nurses trained to observe the symptoms of increasing tracheal obstruction due to arterial hemorrhage, and they should be qualified to act immediately when serious interference with breathing is present. A life can be saved, in a moment, by completely opening the wound at the bedside and removing the blood clots. This produces immediate relief of the tracheal obstruction. Gentle but firm pressure with a gauze pack is made over the bleeding point until the patient can be taken to the operating room where the bleeding points are accurately ligated and the wound closed.

During subtotal thyroidectomy there are technical measures that can be instituted to prevent, to a large degree, the hazards of postoperative arterial hemorrhage. Many of these technical points are advocated by Lahey.[6,8,10] They can be used only when the operation is performed with adequate exposure, in a dry field and with good illumination. A greater exposure can be obtained in large glands by cutting the prethyroid muscles transversely and reflecting them upward and downward away from the superior and inferior poles (Fig. 2). By mobilizing the gland from the thyroid bed and rotating it medially, adequate exposure is obtained for the dissection of the inferior thyroid artery. If the operation is performed in a blood-stained field there is greater danger of inadequate hemostasis, postoperative hemorrhage, and injury to the parathyroid and recurrent laryngeal nerves.

With the superior thyroid pole well exposed, with traction downward and medially, the superior thyroid arteries can be dissected out from the surrounding areolar tissue and demonstrated as vascular trunks. A double ligature securely placed around these vessels is infinitely better than a single ligature. The ligatures should be placed approximately one millimeter apart so that the vessels are ligated at two separate points (Fig. 3). The vessels should not be cut too close to the inferior ligature. No matter how high the superior pole ascends it must be exposed so that the superior thyroid vessels can be accurately ligated without including a segment of thyroid tissue from the top of the superior pole in the ligature. If a mass of thyroid tissue is included with the vessels, it is impossible to tie the ligature tightly enough to prevent it from slipping postoperatively, during the strain produced by vomiting and coughing.

With the superior thyroid vessels and lateral veins ligated and cut and the great vessels of the neck retracted laterally, the lobe can be rotated medially, giving an adequate exposure for dissection of the inferior thyroid artery as a single trunk. It is found in the areolar tissue behind the gland, as it passes from behind the carotid artery to the posterior aspect of the gland, near the tracheo-esophageal angle. By ligating the inferior

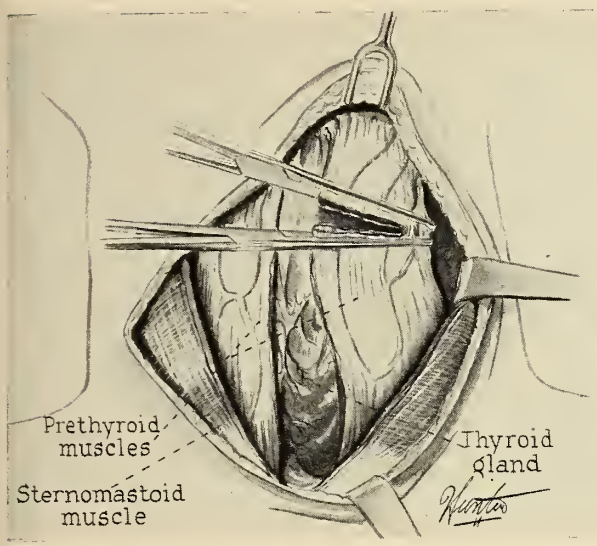


Fig. 1. Through a low curved collar incision, the skin, subcutaneous tissue, and platysma muscle are raised to the level of the notch of the thyroid cartilage. The medial border of the sternocleidomastoid muscle is freed, the prethyroid muscles split longitudinally, and cut transversely at a high level.

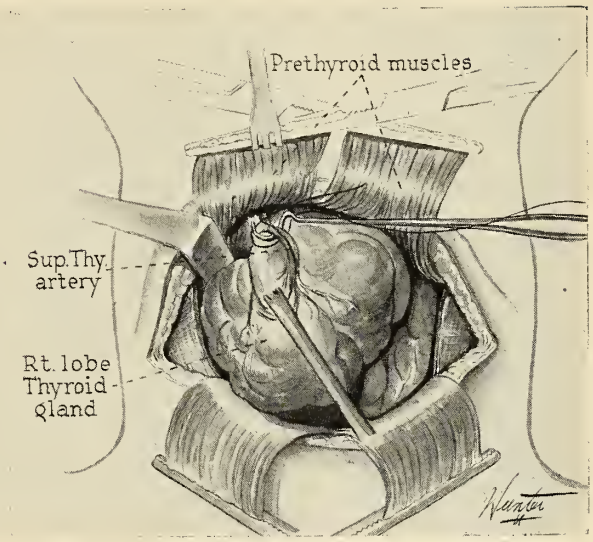


Fig. 2. The prethyroid muscles are reflected upward and downward exposing the thyroid gland. The superior pole is retracted downward, medially, and dissected free from the surrounding areolar tissue exposing the superior thyroid vessels for double ligation.

thyroid artery in continuity in its extracapsular course, bleeding from this vessel can be largely eliminated (Fig. 4). The vessel need not be ligated routinely; however, there is a distinct advantage in having it exposed, should troublesome hemorrhage arise from the remnant during the resection of the thyroid lobe. Diagramatically, the relationship of the branches of the artery to the recurrent laryngeal nerve is shown in Figure 6, *a* and *b*. If a hemostat is plunged into the remnant to clamp the artery, there is danger of injuring or ligating the recurrent laryngeal nerve. By rotating the hemostats and the gland medially, the hemorrhage can be controlled by ligating the inferior thyroid artery in its extracapsular course. Also, the surgeon's index finger may be used to compress the vessel against the cervical spine so that the bleeding remnant can be controlled, sponged, and the vessel individually snapped and accurately ligated. Mass ligatures and gland sutures have no place in thyroid surgery, if postoperative complications are to be avoided. Oozing from the thyroid remnant, which mainly comes from the terminal branches of the inferior thyroid artery, can be further prevented by suturing the lateral edge of the capsule of the remnant to the pretracheal fascia so that the cut surface is buttressed and compressed against the trachea (Fig. 4.) The surgeon must be careful not to indent or compress the trachea in accomplishing this phase of the technique.

A double ligature around the inferior thyroid veins, as they leave the inferior pole, is an additional measure of safety. Postoperative venous bleeding beneath the prethyroid muscles may arise from these vessels or from the lateral veins. Rarely must the wound be reopened and the bleeding point ligated. A careful inspection of the entire thyroid bed should be made in search of small points of oozing before the prethyroid muscles are sutured.

Thyroid Crisis

With the administration of the new antithyroid drugs for preoperative preparation, postoperative thyroid crisis or storm rarely occurs unless the patient with severe hyperthyroidism is inadequately prepared for operation. Clute[2] believes that, with improvement in the preoperative preparation of patients as practiced at the present time, serious thyroid storms can probably be avoided.

The etiology of a crisis is unknown. Thyroid crises have occurred in individuals with severe hyperthyroidism, especially in patients who resist, or respond poorly, to adequate preoperative preparation. A crisis may occur in elderly individuals, and patients over fifty years of age, or in those having hyperthyroidism for a year or longer. Other signs of dangerous toxicity may not be observed until the thyroidectomy is in progress. Marshall[4] states that during the first part of the operation severe hyperthyroidism is present if

NOTE: Figures 1 through 5 inclusive are the artist's illustrative reproductions made from the author's colored photographs taken during thyroidectomy at the Minneapolis General Hospital. The artist's sketches in Figure 6 were taken from illustrations by Lahey.[7,9]

there is a progressive rise in the pulse rate, a rising blood pressure with an increasingly widening pulse pressure, and an increasing demand for anesthesia depth with oxygen consumption over 600 c.c. of oxygen per minute. Conditions such as heart disease with decompensation, auricular fibrillation, pregnancy, diabetes, and acute infections increase the severity of hyperthyroidism and may be present in some cases of thyroid crises.

A postoperative thyroid crisis usually occurs during the first forty-eight hours, producing obvious symptoms and signs, indicating that a very serious state of toxicity is present or impending. The condition often begins with diarrhea and vomiting. The pulse rate continues to rise to exceptional rates, over 150. The temperature elevation is excessive, usually over 104 degrees. Sweating may be profuse. When dehydration occurs, the skin is dry and hot. Restlessness mounts into extreme activation. Psychic disturbances and a delirium which may become violent are present. There are periods of apathy, resembling coma. The condition is one of utmost gravity, from which the patient may not recover.

Postoperative storm is best prevented by adequate preoperative preparation and by limiting the extent of the thyroidectomy, according to the severity of the hyperthyroidism, and the operative reaction of the patient. The correct time for surgical intervention is when the patient has received the maximum benefit from his preoperative preparation. With the administration of the new antithyroid drugs, the pulse rate, basal metabolism, and weight should be normal. At the present time the possibility of a crisis can be reduced when the patient is properly prepared with adequate rest, sedation, a high carbohydrate diet, intravenous glucose, vitamin B complex, Lugol's solution, and propylthiouracil—or one of the new antithyroid drugs. As a last resort, the surgeon can interrupt the operation, when there are serious changes in the pulse rate, pulse pressure, or oxygen consumption, in order to avoid a crisis. Rea[14] recommends the use of spinal anesthesia as an adjunct to general anesthesia and to the operative management of severe hyperthyroidism, on the thesis that it would inhibit medullary adrenal releases during operation and forestall severe postoperative reactions.

When a thyroid crisis does occur, the postoperative therapy is intensified. In the presence of increased sweating, vomiting, and diarrhea, there is a greater demand for fluids, saline, iodine, and glucose. These are best administered by a constant intravenous drip. Ten per cent glucose provides calories and protects the glycogen stores in the liver which are being rapidly depleted during the crisis. Sufficient sedation in the form of morphine and barbiturates are given to control restlessness. The patient is kept in an oxygen tent; frequent sponge baths are given. According to Rea,[14] spinal anesthesia is also beneficial during a postoperative storm. Improvement is noted within twenty-four hours in favorable cases after these emergency measures are instituted. Such measures should be continued until all signs of active crisis have disappeared, at which time the usual postoperative therapy is administered until the patient leaves the hospital.

Tracheal Obstruction

Postoperative tracheal obstruction is caused by severe postoperative hemorrhage, edema, and collapse of the trachea. It frequently occurs as a late result of bilateral recurrent laryngeal nerve paralysis.

Tracheal obstruction produced by serious arterial or venous hemorrhage beneath the prethyroid muscles has been discussed. After the blood under tension is released and the hemorrhage is controlled, the symptoms of tracheal obstruction are relieved and tracheotomy is seldom indicated. If there is persistent difficulty in breathing after the tension is relieved, a tracheotomy should be done before the wound is closed. The edema of the larynx and upper trachea, associated with hemorrhage, may increase before it improves, especially following the manipulation and trauma of opening and closing the wound for a second operative procedure. It is an error to trust that the breathing will improve. Prolonged partial obstruction and anoxemia may result in a fatality if the operator postpones performing a tracheotomy. Whenever stridor, cyanosis, or any interference with breathing persists, tracheotomy is urgently indicated.

A gradual partial-tracheal obstruction may develop postoperatively due to edema. Edema of the wound spreading into the larynx or narrowed upper part of the trachea is caused by hemorrhage, infection, and surgical trauma. When symptoms of obstructive breathing develop as a result of edema, tracheotomy is indicated. Lahey[8] states that when in doubt, it is infinitely better to per-

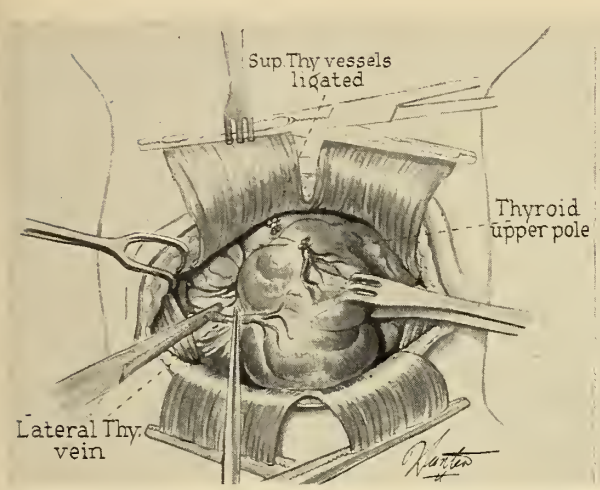


Fig. 3. The superior thyroid vessels are ligated and cut. The gland is rotated medially. The lateral thyroid veins are exposed, doubly clamped, cut, and ligated permitting further medial rotation of the gland.

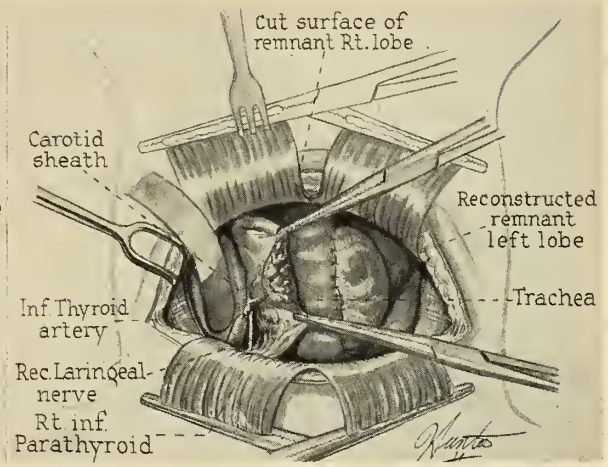


Fig. 4. The posterior surface of the gland is shown. The inferior thyroid artery is exposed and ligated in continuity as it passes from behind the carotid sheath to the gland. The course of the recurrent laryngeal nerve is shown. With the isthmus and the major portion of the lobes removed, the trachea, the cut surface of the right remnant, and the left remnant sutured to the pretracheal fascia are shown.

form an occasional unnecessary tracheotomy than to lose a single patient because of failure to take this precaution. Clute[2] states that tracheotomy should not be delayed in the presence of stridor. It is a serious error to await cyanosis, because the margin of safety is so narrow that any slight increase in obstruction may produce sudden death. The edema usually subsides within a week. The tracheotomy tube can be removed after the patient demonstrates that breathing has returned to normal.

Collapse of the trachea is a very rare postoperative occurrence. It has occurred in the presence of marked bilateral compression of the trachea due to long-standing pressure of an intrathoracic goiter. Collapse can occur during the operation after the pressure of the goiter has been removed. Apparently degenerative changes and atrophy of the tracheal rings account for the collapse. Carcinoma when directly invading the trachea may weaken the rings, with failure to restore an adequate airway, thereby necessitating tracheotomy. A noncollapsible endotracheal tube is frequently used in operating for intrathoracic goiters to avoid difficulties in administering an inhalation anesthetic, and to avoid complete tracheal compression during the extraction of the goiter. Then the collapse may not be apparent until after the tube has been removed. Ordinarily, the tracheal rings assume their normal outline when an intrathoracic goiter is removed and pressure is relived, but restoration of tracheal deviation is a more gradual process. The rare occurrence of tracheal collapse, whatever its cause may be, should be considered a cause of tracheal obstruction and treated by tracheotomy if serious interference of breathing is present. Tracheal obstruction may also occur as a late result of bilateral recurrent laryngeal nerve injury with bilateral paralysis of the vocal cords. During a six months' period, after injury to the recurrent nerves, the cords undergo atrophy and fibrotic contraction, bringing them close to gether in the midline. As the glottic space is narrowed, the patient's voice improves, but there is increasing difficulty in breathing. When the glottic space becomes so narrow that obstructive symptoms are severe (as indicated by the characteristic crowing on forced inspiration, stridor, and a sense of suffocation) a tracheotomy is indicated. In the presence of an acute upper respiratory infection and laryngitis, patients with bilateral paralysis of the vocal cords are in constant danger of suffocation. An emergency tracheotomy may be necessary in this condition.

Laryngeal muscle spasm is frequently observed as a patient awakens from an inhalation anesthetic. Usually the spasm can be relieved by administering oxygen and helium, atropine, or curare. Tracheotomy has been done when the condition persists.

An annoying complication occurs when a hole is accidentally made in the trachea. The opening must be closed by suture. When the mishap occurs in a

bloody field, aspiration of blood can be prevented by placing the finger over the hole until the field can be made dry and the opening closed.

Tracheotomy has been done high, just below the cricoid cartilage, because that is where the trachea is easiest to expose in the presence of a thyroid isthmus. Since the trachea is narrow at that level, it is incorrect to place a tracheotomy high. A stricture may develop due to cicatricial contraction and stenosis after the tube is removed. During thyroidectomy the isthmus should be removed and the trachea exposed. It is important to remove the isthmus (Fig. 4), not only in order to remove adequate amounts of thyroid tissue, but also because the trachea is then prepared, with valuable time saved, should a tracheotomy become necessary. In case of an emergency, one should then be able to do the tracheotomy quickly and easily at a lower level.

Parathyroid Tetany

Postoperative parathyroid tetany is caused by the removal of one or more parathyroid glands. Operative injury of the parathyroids, interference of their blood supply, thrombosis, edema, and fibrosis may also reduce parathyroid secretion sufficiently to produce transient tetany. Tetany will be permanent and complete if all parathyroids are removed, and will probably be transient and mild if only one or two glands are removed. Postoperative tetany is a rare complication and is usually transient when it does occur. In most large clinics, the incidence is less than 1 per cent. Bilateral ligation of the superior and inferior thyroid arteries does not appear to produce tetany.

In order to preserve normal parathyroid function, following thyroidectomy, the parathyroids should be preserved uninjured in their normal anatomical positions. A small strip of the posterior thyroid capsule extending from the superior to the inferior poles should be preserved, since parathyroid glands are most often located in that region. It is not necessary to search for the parathyroid glands routinely. However, during thyroidectomy, one should watch for them and be able to identify them. In order to locate, recognize and protect these small structures, it is necessary to have a thorough knowledge of their appearance and normal location. The structures are easier to find when an adequate exposure of the posterior capsule of the gland is obtained in a dry field and under good illumination. A magnifying lens will aid in identifying them.

The superior parathyroids are most constantly found near the posterior aspect of the upper pole of the thyroid gland where it rests laterally against the trachea and larynx. The inferior parathyroids are most often found on the posterior capsule of the thyroid gland, in close relation to the branches of the inferior thyroid artery (Fig. 4). However, parathyroids may be found in atypical positions such as within the gland, on the anterior or lateral surface, or well outside of the gland, and in the mediastinum. Their color is light mahogany-brown. They are about one-half the size of a small pea, have rounded edges, and are covered by a glistening capsule. The texture of the parathyroids is more firm than a globule of fat. Being supplied by an end artery, they appear to be movable on a narrow pedicle. By observing these characteristics of parathyroids, one can preserve them in most instances. However, one can never be certain that a structure is a parathyroid gland except by microscopic examination. Occasionally a structure is left in situ, on the assumption that it is probably a parathyroid without its identity being absolutely established. In large adenomatous goiters, intrathoracic goiters, and in cases of recurrent hyperthyroidism, injury to the parathyroids is more frequent because there is greater variation in their location. Greater care is necessary in operating on these patients if injury to the parathyroids is to be avoided.

Transplantation of parathyroids from one individual to another offers little chance of restoring normal parathyroid function. Auto-transplantation, as practiced at the Lahey Clinic, may be of benefit, though the actual value of the procedure is difficult to evaluate. Parathyroids are accidentally removed often enough to warrant a careful routine search for them on the surface of the resected thyroid tissue. If a suspicious parathyroid body is found, a tiny biopsy is taken for subsequent microscopic verification and the tissue is transplanted into a dry pocket made in the belly of the sternomastoid muscle before the wound is closed. Cattell[1] has shown that in 472 possible parathyroid implantations, 160 (34 per cent) were actually parathyroid glands by microscopic examination. None of these patients developed postoperative tetany.

Severe tetany occurs within two or three days postoperatively, whereas the milder forms develop later. In tetany there is an increased irritability of the peripheral motor nerves. The patient complains of stiffness in the muscles of the hands, legs, face, and neck. There may be cramps and muscular twitchings of the muscles of the extremities and face. Marked muscle spasm occurs in the hands when the nerve trunk is deprived of its circulation by means of a blood pressure cuff. This response is due to asphyxia, and is called Trousseau's sign. The facial and abdominal muscles may be forced to contract violently by the mildest stimuli. Spasms are painful and may occur spontaneously. Contraction of the facial muscles can be produced by mechanical stimulation, Chvostek's sign, when the facial nerve is gently tapped in front of the ear. Numbness and tingling of the face, hands, feet, and legs may be present. Erb's sign is elicited when muscular contraction is produced by stimulating a motor nerve with a much weaker galvanic electrical stimulus than is normally necessary. The response is obtained with less than 5 ma., while normally over 6 ma. are required. Tetany of longer duration produces ectodermal changes, such as bilateral cataracts, courseness and thinning of the hair, and rigid nails. Gastrointestinal disturbances occur with abdominal pain, and alternating constipation and diarrhea. Excitement, exertion, and overbreathing may precipitate an attack of muscle spasm. Epileptiform convulsions, hyperpnea, salivation, severe depression and death will occur in permanent and untreated tetany.

There is a decreased concentration of serum calcium from a normal of between 10 and 12 mg. per cent, to 8 and 6 mg., or even lower; with an elevation in the serum phosphorus from the normal of 3 or 4 mg. per cent, to 6 or 8 mg. per cent. A blood calcium of 7 or 8 mg. per cent is usually found in transient or latent tetany. Presumably, the hyper-irritability of the motor nerves is due to a diminished amount of ionized calcium in the blood.

According to MacBryde,[11] the treatment of hypoparathyroidism may be considered under two headings: (1) the acute attack, and (2) chronic tetany.

A patient may die in the acute attack from severe laryngeal spasm, diaphragmatic spasm, or from repeated epileptiform convulsions. Prompt and effective treatment is necessary. Intravenous calcium is given. Calcium chloride is very irritating to perivascular tissues if leakage occurs. From 10 to 20 c.c. of a 5 per cent solution will terminate most attacks abruptly. Calcium gluconate is less irritating to the tissues and can be administered intravenously or intramuscularly in doses of 10 to 20 c.c. of a 10 per cent solution. The blood calcium will be restored to normal promptly, but the effect is transient in severe tetany. Within one to four hours the serum calcium will fall to its previous level. The intravenous injection may be repeated once or twice if necessary until other therapeutic measures become effective. One to three cubic centimeters of parathyroid hormone (100 U.S.P. units per c.c.) should be given intravenously or intramuscularly immediately after the calcium is administered. Within a few hours the serum calcium is raised. The peak effect is from eight to eighteen hours, while all effect is lost in from twenty to twenty-four hours. Daily injections of the extract are required in a patient with severe hypoparathyroidism. The disadvantages of the extract for continued therapy is that it is expensive, inconvenient to administer, and the patient usually develops a tolerance so that larger doses are required; and finally little or no response occurs.

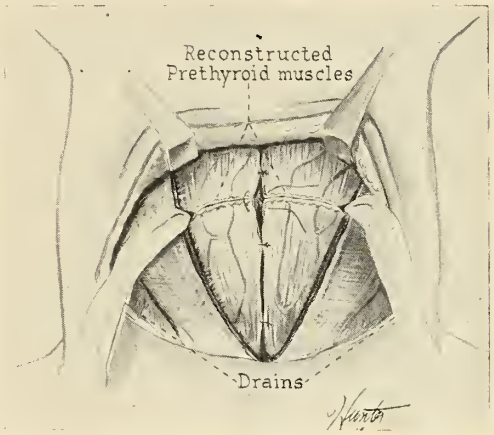


Fig. 5. The prethyroid muscles are reconstructed using fine Lembert and Halsted mattress sutures. Small rubber drains placed in each thyroid bed are brought out laterally through the prethyroid muscles and skin incision.

The treatment of chronic tetany should begin immediately after the acute attack and as soon as it is evident that the patient cannot maintain a normal serum calcium level. A high oral calcium intake should be administered. From 5 to 15 gms. of calcium lactate or gluconate daily are usually advisable. MacBryde[11] has found that

this amount of calcium is not disagreeable. It reduces the cost of treatment, since the dose of dihydrotachysterol varies with the severity of the case and the amount of calcium ingested. Dihydrotachysterol (Hytakerol) will maintain serum calcium within normal limits even in the most severe cases of hypoparathyroidism. It is taken orally in capsules containing 2.5 mgs. or in a 0.5 per cent solution, 1 c.c. representing 5 mg. The initial and maintenance doses are given according to the serum calcium levels. Two to four teaspoonfuls of calcium lactate or gluconate are taken throughout the day. The serum calcium can be raised more rapidly if four capsules (2 c.c.) daily are given for three days, then two capsules (1 c.c.) daily until the serum calcium level is 9 or 10 mg. One capsule (0.5 c.c.) daily, or less often, is the usual maintenance dose which must be determined for each individual patient. By using this schedule the normal serum calcium is reached within seven to ten days. When the drug is stopped the calcium level falls slowly, over a period of two to three weeks. The advantages of dihydrotachysterol is that it is effective orally, is stable, is less expensive, has a prolonged action, and the patient does not develop a tolerance. Frequent blood calcium determinations are necessary until the maintenance dose is established; then it need be determined only every two or three months. The amount of calcium excretion in the urine can be determined by the Sulkowitch test which will give rough estimations of the blood calcium levels. In excessive amounts, the drug may cause hypercalcemia and severe toxic effects.

According to MacBryde,[11] Vitamin D concentrates in doses of 50,000 to 150,000 units with large doses of calcium lactate or gluconate taken orally will give similar results to those obtained with dihydrotachysterol.

Dessicated thyroid promotes calcium absorption and tends to maintain a normal serum calcium when hypothyroidism as well as hypoparathyroidism is present. The dose is based on the amount required to restore the basal metabolic rate to normal.

Recurrent Laryngeal Paralysis

Injuries to the recurrent laryngeal nerve occurring during thyroidectomy are due to cutting, crushing, or including the nerve in a ligature. Lahey[7] has shown in over 10,000 recurrent laryngeal nerve dissections that the nerve withstands dissection, gentle handling, and palpation while slightly stretched without immediate or delayed interference with function.

Most recurrent nerves are injured high in their extralaryngeal course at a point below where the nerve passes under the lower border of the inferior constrictor muscle of the pharynx to become intralaryngeal. At this level the nerve passes very close to the superior branch of the inferior thyroid artery, as the artery ascends in the thyroid gland close to the upper part of the trachea or the cricoid cartilage (Fig. 6, *a* and *b*). This vessel is frequently torn during resection of the thyroid lobe so that a hemostat plunged into the remnant as the vessel retracts, may also grasp the nerve. Injury to the nerve at a lower level is much less common, because the course of the nerve from its lower tracheo-esophageal position is obliquely upward, forward, and inward toward its extralaryngeal termination. The nerve may pass behind or in front of the inferior thyroid artery, or between its bifurcation (Fig. 6, *b*, *c*, and *f*). Occasionally an anomalous recurrent nerve will pass at a higher level directly from the vagus nerve to the larynx (Fig. 6, *d*), or it may descend only to the level of the inferior thyroid artery, around which it passes before ascending to the larynx. There may also be a rare anomalous extralaryngeal division of the nerve into adductor and abductor fibers before it enters the larynx (Fig. 6, *e*). The surgeon must be aware of the occasional existence of these anomalies to avoid injury to the nerve during its dissection. The nerve is in danger when surgery is performed for large adenomas adjacent to the posterior capsule, intrathoracic goiters, recurrent hyperthyroidism with excessive scar formation, or when a total lobectomy is necessary. In such cases the nerve may be displaced, or so closely encroached upon, that it must be exposed in order to avoid injuring it.

The nerve contains abductor and adductor fibers carrying impulses which produce opposing muscle actions. In addition, there are co-ordinating impulses concerned with speech and breathing. A rare condition of serious interference with breathing could occur during operation in a patient whose recurrent nerves divided into adductor and abductor fibers before entering the larynx, provided bilateral injury occurred, selecting only the abductor fibers of the bifid nerves.

The cords would then be adducted, the glottic space narrowed, and immediate serious obstructive breathing could then occur.

Injury to one recurrent laryngeal nerve results in a flaccid paralysis of the cord. In a few months the cord becomes fixed in the midline, due to atrophy, fibrosis, and contraction. There is usually no interference with breathing because the normal cord can be abducted sufficiently to provide an adequate airway. Occasionally an audible stridor can be heard in these cases after marked physical exertion because the glottic space is narrowed by the paralyzed cord. There is usually an immediate change in the voice which is largely overcome by compensation as the normal cord approximates itself to the paralyzed cord. However, unilateral injury frequently passes unnoticed by the patient and the surgeon. The only inconvenience may be a cracking of the voice when used with force. The diagnosis should be established by careful laryngoscopic examination. The cords should be examined in all cases operated upon for recurrent hyperthyroidism. If a unilateral paralysis of the cord is discovered, the normal recurrent nerve must, by all means, be preserved if a bilateral paralysis is to be avoided.

When both recurrent laryngeal nerves are injured, the innervation of both vocal cords is lost, including the ability to adduct or abduct the cords. They become flaccid and assume the cadaveric position. Difficulty during the operation in the patient's breathing is rarely encountered. Postoperatively, the patient is unable to tense or adduct the cords, so that the voice is lost for anything more than a whisper. Usually the voice begins to return within six months. As a result of atrophy, fibrosis and contraction of the cords, the laxity disappears, the cords become more tense, and the voice partially returns. As the process continues and the glottic space is narrowed, there is further gradual improvement in the voice. However, about this time the patient begins to have difficulty in breathing through the fixed narrowed glottic space; the cords vibrate, producing the characteristic crowing sound heard on forced inspiration associated, sometimes with the slightest exertion or physical activity. A laryngoscopic examination will reveal the paralyzed cords. The activity of some of these patients may be markedly limited by the interference with breathing so that a tracheotomy is indicated. These patients may become anoxemic with the slightest exertion. An emergency tracheotomy is indicated if an acute laryngitis precipitates suffocation.

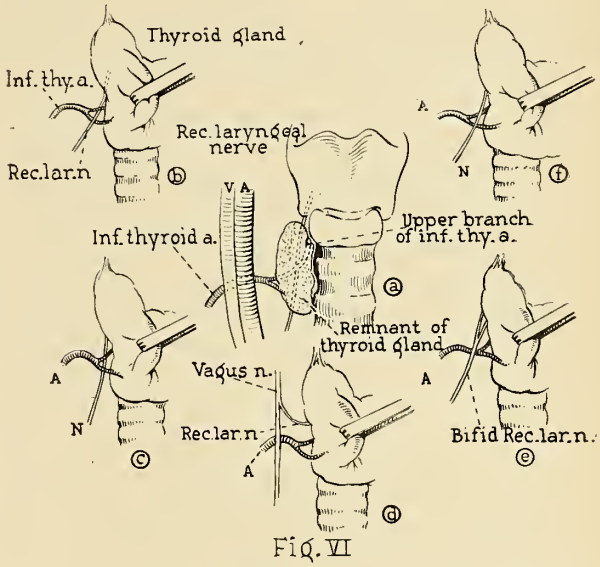


Fig. 6. Sketches showing *(a)* the diagrammatic relationship of the inferior thyroid artery and the recurrent laryngeal nerve to the remnant of the thyroid gland; *(b, c, d, e, and f)* the variable course of the recurrent laryngeal nerve in relation to the inferior thyroid artery.

There are several procedures available to patients with long standing abductor paralysis. A permanent tracheotomy with a flap valve which automatically closes on expiration can be performed. This will give an adequate airway and will allow the patient to speak to the degree that the voice had previously returned. The operation practiced by Lahey and Hoover[9] is a submucous resection of one of the paralyzed cords. The operation provides an adequate mucous membrane lined airway in the larynx, but there is further loss of voice which resembles a hoarse whisper. The advantage of the procedure is that a permanent tracheotomy tube is no longer necessary. This is also true of the King operation or its modifications. In the operation of laryngoplasty described by King,[3,5] the arytenoid cartilage is dislocated, rotated, and pinned back to the thyroid cartilage by two extralaryngeal stitches so that an adequate airway is provided with little, if any, change in the voice. Kelly[4] modified the King operation by excising the arytenoid cartilage extralaryngeally through a window in the thyroid cartilage. Wright[15] advocates that, after the arytenoid cartilage is delivered, the posterior end of the vocal cord be sutured to the external peri-

chondrium so as to secure a wider glottic space. In the McCall and Gardiner[13] modification of the King operation, the arytenoid cartilage is not removed, but anchored in the window of the thyroid cartilage using a direct laryngoscope as a guide. Late anastomosis of injured recurrent nerves has not been successful. Within six months the vocal cords become fixed, contracted, with ankylosis of the arytenoid cartilages. If nerve regeneration does take place, the cords are too fixed to respond to their impulses. Whether a small nerve containing both adductor and abductor fibers and carrying impulses with opposing muscle actions can regenerate, restoring normal function, is not definitely known. Whenever an anastomosis of the nerve is undertaken, the anastomosis should be done early with a true anatomical approximation. If a bilateral nerve injury is discovered while the patient is still on the operating table, Lahey[7,8] advises that the wound be reopened and a repair attempted. If the injury is not discovered until several hours after the operation, he advises waiting for ten days to determine whether cord function returns. If it does not return and the patient's condition is good, he recommends early repair. This offers practically the only chance of restoration of function, since the arytenoid muscles are still movable and the cords are not fibrosed.

For over a period of ten years the dissection of recurrent nerves, as performed by Lahey[7] has been practically a routine procedure in thyroidectomy. It is recommended as a safe and justifiable procedure which diminishes, if not largely eliminates, injuries to the nerve. After adopting this procedure, a reduction in the incidence of recurrent laryngeal paralysis from 1.6 per cent to 0.3 per cent is cited.

Anyone trained to do thyroid surgery should know the course of the recurrent nerve accurately and be able to demonstrate it. The attitude that a nerve will never be injured if it is not seen and if a strip of thyroid tissue is left posteriorly, is false. Because of the danger of injuring the nerve, one should not persist in locating it in a blood-stained field, or under adverse circumstances. The nerve can be preserved by exposing it whenever the dissection or resection of the thyroid encroaches upon its course. Adequate exposure for this dissection is obtained after the superior thyroid vessels and lateral veins are ligated and severed so that the lobe can be lifted from the thyroid bed and rotated medially (Fig. 4). The carotid sheath is freed from the gland and the great vessels of the neck retracted laterally. The inferior thyroid artery is demonstrated in the fine areolar tissue in this area between the esophagus and the trachea. At this point the recurrent nerve passes upward, forward, and inward, adjacent to the trachea toward the bifurcation of the inferior thyroid artery (Fig. 4 and 6). If the areolar issue is stained with blood, the color and the appearance of the anatomical structures will be so disturbed that the dissection will be difficult or impossible without greatly endangering the nerve. Unless there is an adequate exposure, a dry field, and a good light, the nerve should not be dissected.

Hypothyroidism and Persistent Hyperthyroidism

Postoperative hypothyroidism and persistent hyperthyroidism are a result of removing too much or too little thyroid tissue. One can have a more accurate understanding of this problem if the amount of tissue left as a remnant is indicated, rather than the amount of tissue removed. Roughly, the remnant may be designated as being small, moderate, or large in size. Several factors influence the amount of gland to be left behind as a newly constructed thyroid remnant. With a knowledge of these factors, the surgeon may still not succeed in accomplishing an accurate resection, or tailoring a remnant of appropriate size for every individual. If an error must be made, it is infinitely better in most cases to take a little too much than too little tissue. A mild degree of hypothyroidism can be satisfactorily controlled medically with thyroid extract.

A radical resection should be done in individuals with severe hyperthyroidism, who have large glands, who are young and who have had the disease for a long period of time. Patients resisting preoperative preparation should also have more radical resections. Before the days of thiouracil, when iodine alone was used for surgical preparation, the degree of involution of the gland was considered to be a most important factor. A well involuted gland shrinks markedly, becomes firm, pale, and avascular. A more radical resection was indicated in the glands that did not involute well. A more radical resection is usually done in exophthalmic than in adenomatous

goiter and patients with recurrent hyperthyroidism obviously require a more radical resection.

A less radical resection should be done in mild hyperthyroidism, in older individuals, and in children. The patients showing a good response to surgical preparation and good involution of the gland should have less radical resections. Children with hyperthyroidism should be left with more thyroid tissue than is left in the adult as postoperative myxedema in a child interferes with normal mental development and growth, and is to be avoided.

Persistent and recurrent hyperthyroidism are often a result of inadequate resection or attempting to do a subtotal thyroidectomy without adequate exposure, or adequate mobilization and rotation of the thyroid lobes. Large sections of the posterior aspect of the gland and retrolaryngeal extensions are often overlooked. Leaving portions of a hyperplastic isthmus or a pyramidal lobe may also cause recurrences.

Tracheal Irritation

Following a thyroidectomy, there is frequently some degree of tracheal irritation or tracheitis, with cough, and expectoration of mucus. It seems to be caused by rough handling of the larynx and trachea in difficult goiters with retrolaryngeal and substernal extensions. The dissection of the isthmus from the front of the trachea causes little difficulty. Mild irritation usually disappears in a day or two without special treatment. In other cases, steam inhalations make the patient more comfortable, loosens the mucus, and facilitates expectoration. If mucus accumulates in the trachea or upper respiratory passage during operation, an intratracheal catheter should be passed to suck it out. Anesthesia through an endotracheal tube, properly introduced, is deal for thyroidectomy. An airway is maintained at all times. Tracheal secretions can be aspirated during, and at the end of the operation. If sufficient mucus develops postoperatively to interfere with the patient's breathing, suction bronchoscopy should be instituted immediately. This is the safest means of preventing or treating an atelectasis.

Exophthalmos

Ocular complications may occur in patients having severe exophthalmos. If the eyes are left unprotected by incomplete closure of the lids, the eyes may be injured during the operation or early in the postoperative course. Conjunctivitis, injury to the cornea, corneal ulcers, or other injuries to the eye may occur. The eyes should be protected during the operation with an ophthalmic lubricant and vaseline strips. It may be necessary to suture the lids closed before operation and leave the sutures in place for a few days when the exophthalmos is severe in order to protect the eyes. Following thyroidectomy, the exophthalmos gradually improves in most cases. Rarely, in severe exophthalmic goiter, a progressive exophthalmos may develop postoperatively with marked protrusion of the eyeballs and permanent loss of the eyes. A competent ophthalmologist should observe and treat these eye complications.

Wound Complications

Wound complications following thyroidectomy are usually not serious. An acute infection of the wound rarely occurs. Occasionally a generalized brawny edema of the muscles, fascia, and skin flap is observed postoperatively. This will quickly subside with the application of hot packs. Small collections of serum beneath the skin flap will be absorbed in a short time. Larger pockets or collections of serum should be drained by probing through a small opening in the incision. Occasionally, a small rubber tissue drain may be inserted until the walls of the space collapse and become adherent. Deep induration and swelling of the wound may be present for five or six weeks, especially if the muscles have been cut transversely.

Lahey[6,10] advises drainage of the thyroid bed through the lateral angles of the wound. Kocher drained his cases through a stab wound below the incision. This adds an additional scar which may be quite unsightly, though the goiter scar may be excellent. It then became customary to insert the drains in the midline through the incision but this is undesirable because the drains pass between the separated fibers of the prethyroid muscles, so that when the drains are withdrawn, adhesions form between the skin, subcutaneous tissue, and trachea. These adhesions either contract and distort the incision, or the scar may ascend or descent with the trachea with each act of swallowing. If drainage following thyroidectomy is instituted, a small Penrose drain may be placed in each thyroid bed and brought out laterally through the prethyroid

muscles and skin incision (Fig. 5). There will be less danger of adhesions distorting the goiter scar in this position; also, the skin closure is flexible over the fascia and underlying muscles. The drains are removed in twenty-four to forty-eight hours, depending upon the quantity of serosanguinous drainage present. When the surgical field is unusually dry, the wound may be closed without drainage. Better looking scars result when drains are removed early or not employed at all.

When drains are placed in a deep mediastinal pocket, left after the removal of an intrathoracic goiter, the drains should not be removed until the pocket has collapsed and its walls become adherent. Lahey[8] advises draining these cavities from seven to eight days, plus following the removal of the drain with a baby catheter until the cavity is completely obliterated. Fluid will accumulate in these cavities if they are not allowed to collapse, or if the drains are removed too early.

The skin clips are applied loosely and removed on the second and third postoperative days. If the skin clips are left in too long, the small barb on the clip will produce pressure necrosis, causing unsightly puncture scars which are much like the scars seen where coarse, interrupted, nonabsorbable sutures are employed. Even though the skin clips are removed early, the skin incisions do not break open. Postoperative thyroid patients have marked discomfort, even with limited extension of the neck, which serves as a protective mechanism so that traction placed on the skin incision is insufficient to produce a wound separation or have any influence on the final width of the scar. A uniform, moderate pressure bandage applied over the wound during the first forty-eight hours will reduce the incidence of serum collections beneath the skin flap.

The incision is a low, curved collar-incision placed the breadth of one finger above the clavicle and two fingers above the sternal notch. In glands with a greater outward growth, the incision is made a little higher to allow for more of a drop in the final scar. Ordinarily, the final scar is located at the junction of the neck and chest where it can be easily concealed in women with a necklace. When the scar and underlying fascia become adherent, producing an irregular angulation of the incision after primary healing takes place, the final appearance of the scar can be greatly improved by massaging and stretching the incision to lengthen the adhesions. A revision of the incision should not be attempted within a year; and then a revision is seldom necessary. Lahey[8] states that keloids respond poorly to postoperative irradiation. He prefers to treat them by excision, followed by irradiation of the incision within a week in order to prevent the formation of another keloid.

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Routine chest roentgenograms are now made on all patients at the time of their admission to all (Veterans Administration) hospitals and on all veterans who visit our outpatient departments for pension or compensation examinations, unless they have been examined within the previous six months. In addition to this, annual roentgenograms are to be obtained for all hospital employes and all patients who are hospitalized for more than one year.—John B. Barnwell, M.D., *Am. Rev. Tuberc.*, July, 1948.

THE CONTROL OF TUBERCULOSIS IN MINNESOTA

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THE MIDWESTERN state of Minnesota, having an area of 84,068 square miles, a population in 1940 of 2,792,300 and being an agricultural and mining area, enjoys one of the lowest mortality rates from tuberculosis in the United States.[4,6] In 1946, the comparative statistics relative to tuberculosis in Minnesota stood as shown in Table I.

TABLE I. COMPARATIVE RATES FOR TUBERCULOSIS MORTALITY AND BEDS PER ANNUAL DEATH, 1946.

	Mortality Rate per 100,000	Beds per Annual Death
Minnesota	21.1	3.54
United States	35.9	1.70

Despite this favorable position among the several states and continually improving tuberculosis control program the public health leaders of the state estimate that there are still some 2,500 cases of active tuberculosis within the eighty-seven counties of Minnesota. It is probable, however, that the relative wealth of the area, the absence of overcrowding, the vigorous stock of the people, and the long freedom from war on home soil have all exercised a beneficient effect on tuberculosis morbidity in the past.

Role of the State Health Department

The basic control of tuberculosis in the state of Minnesota is carried out essentially by the medical practitioners of the state. The impetus for continuing routine control measures and beginning new ones is given, however, by the state health department through its small but active Division of Tuberculosis.

The staff of the latter unit consists of: a director, qualified by holding the M.D. and M.P.H. degrees; a central office force of nine persons, mostly secretarial; a field service of three public health nurses; and four mobile unit x-ray technician-drivers.

Through his parent unit, which is the Section of Preventable Diseases, the director of the Division of Tuberculosis has access to the complete tuberculosis reports of the state. These reports include a life file, which lists all living reported cases of tuberculosis in the state back to the year 1913, a death report file and a visible county index file, which notes all those persons in the life file who are in need of medical or nursing supervision. The latter index is most useful, since the staff may, theoretically at least, follow the history of any active case in the state until a cure or death occurs. It is obvious, however, that such a file is far from complete because of the fact that in 1945, 15 per cent of tuberculosis deaths were first reported as cases of tuberculosis at the time of death.[6]

The usefulness of the county index file is dependent upon the co-operative response of practicing physicians and patients to the stimulating letters or visits from the state Division of Tuberculosis staff. Remote control supervision of those active cases in sanatoria can be safely left to the sanatoria; keeping track of the non-sanatorium or ex-sanatorium patient is a more difficult matter. The state office urges those counties that have a public health nurse in attendance to maintain a similar file, follow-ups to be carried out by the nurse.

If an individual carried on the county index file does not answer a query of the state office, and a possibility of infectiousness exists, the case is investigated by an epidemiologist from the state office.

An important work carried on by the Division of Tuberculosis is that of conducting mobile chest x-ray unit surveys throughout the state. There are six such units in Minnesota, three of which are owned by the state; and the remaining three are stationed in and owned by local voluntary societies in St. Louis, Ramsey and Hennepin counties, respectively. The cost of these 70 mm. serial x-ray mobile units, including truck and trailer, runs between 19,000 and 25,000 dollars each.

The surveys are done by county area and upon request of the individual counties. The three state-owned units are almost constantly in operation. Request for a survey is often initiated by the county medical society and must, in any event, be approved by the county medical society and the local tuberculosis sanatorium, if any. Final decision is made by the director of the

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Division of Tuberculosis.[7] To date, all but 15 counties have made requests for a survey. There is a backlog of forty counties to be surveyed.

As yet no county has been surveyed twice, with the exception of St. Louis county. A prerequisite to the conduct of any survey is that at least one public health nurse be available in the county to carry out the neeessary follow-up work obviously mandatory for the success of the program. Such a prerequisite has been instrumental in causing many counties to engage the services of a public health nurse on a permanent basis. A further vital requirement to the success of the procedure is the wholehearted co-operation of the people of the area. In fact, in addition to furnishing personnel, educational propaganda effort, office space and material, voluntary agencies must bear the total cost of the local administrative expenses of such a venture, estimated to amount to 15 cents per film. Each film costs approximately 55 cents in figuring the operating expenses of a unit; 45 cents per film is paid by state and Federal funds allocated for this purpose. During the six months ending in June, 1948, five units (two county, three state) x-rayed 163,000 persons and discovered 1,000 reinfection (adult type) cases of tuberculosis, an incidence of .614 per cent. Seventy-five per cent of these cases were previously not known to health departments.[6]

Exact details of the mobile x-ray unit surveys, as carried out in Minnesota, have been adequately described by Mark[7] and will not be repeated here. However, a previously published[5] flow chart, prepared by the Division of Tuberculosis, is presented in Chart 1 as being of value in giving a comprehensive graphic view of a mobile unit survey.

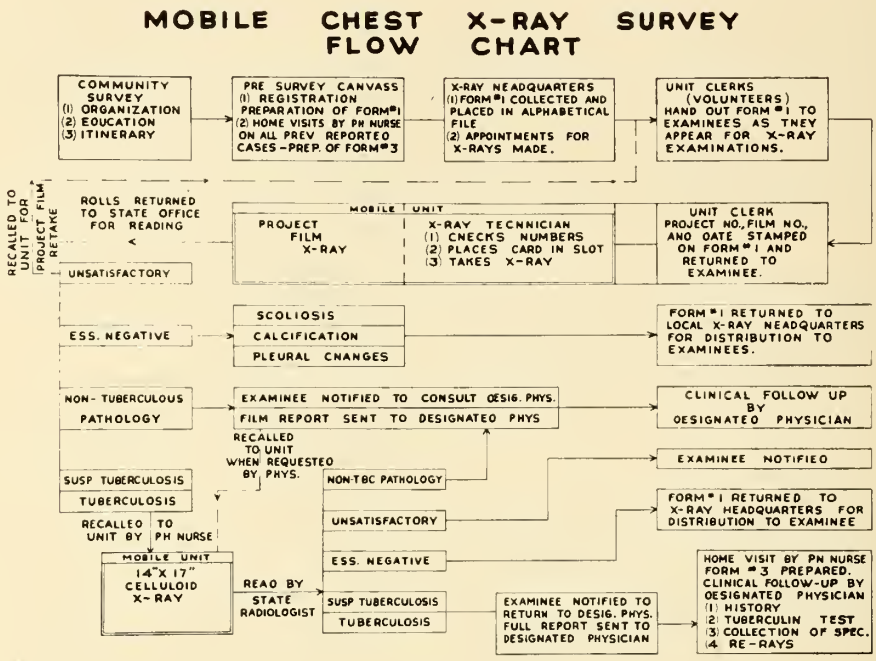


Chart I.

Effective as the mobile unit surveys are in bringing to light cases of tuberculosis, as is indicated in the six months' figures above, it is to be noted that the entire program is voluntary; and, as such, is subject to the defaults of recalcitrant free people. Further, it is impossible to screen more than 75 per cent to 94 per cent of a population of five years of age and above in any given area, during any one survey. Thus, even in surveyed areas, 6 per cent to 25 per cent of the population always escapes examination.[6] The question of time lag also arises. One survey unit can screen 2,000 chests per week on the average. Minnesota, with a population of 2,792,300, could, theoretically, be screened on a state-wide basis in one year by twenty-seven units. The presently available six units, assuming that all six could work constantly, would then require four years to x-ray the entire population. From an economic standpoint it would be impractical to depend upon mobile x-ray units for annual state-wide case finding surveys.

TABLE II. TUBERCULOSIS SANATORIA OF MINNESOTA, 1948

Sanatorium	*Location*	*Beds*	*Counties Served*	*Year Opened*
Minnesota State	Walker (Ah-Gwah-Ching)	355	43	1907
Nopeming	Duluth	275	1	1912
Otter Tail County	Battle Lake	48	1	1913
Ramsey County*	St. Paul	275	1	1914
Mineral Springs	Cannon Falls	100	8	1915
Glen Lake	Oak Terrace	639	1	1916
Sunnyrest	Crookston	60	2	1916
Lake Julia	Puposky	52	4	1916
Sand Beach	Lake Park	42	2	1916
Riverside	Granite Falls	48	4	1917
Buena-Vista	Wabasha	30	2	1917
South Western Minnesota	Worthington	54	10	1917
Oakland Park	Thief River Falls	65	4	1917
Fair Oaks Lodge	Wadena	36	2	1918
Deerwood	Deerwood	26	2	1918
Total		2105	87	

*Includes the Ramsey County Pavilion, a wing of Ancker General Hospital, St. Paul.

The additional twenty-one units, which would be required, alone, not including personnel salaries, would cost $525,000. At 55 cents per film, the cost per annum for the state's people would amount to $1,525,000.00. However, using the presently available machines, the cost on a five-year cyclic continuous mass survey basis would be about $300,000.00 per anum. Whether this latter sum would be balanced in cutting sanatoria operating costs, sickness and unemployment payments, et cetera, is an open question.

Tuberculosis Sanatoria in Minnesota

Since general hospitals in the State (two exceptions in St. Paul and Minneapolis) do not list beds for care of the tuberculous, only sanatoria can be discussed in relation to tuberculosis hospitalization. Minnesota has one state sanatorium, fourteen county sanatoria but no private sanatoria. Distribution of the 2,105 available sanatoria beds and the number of counties serviced by each institution is shown in Table II.

Surgical facilities for collapse therapy among the sanatoria are available only at Ah-Gwah-Ching, Glen Lake, Ramsey Pavilion, Mineral Springs and Nopeming. The smaller institutions all have pneumothorax and x-ray services, but patients must be sent to local general hospitals or to one of the large sanatoria for major surgical therapy. Sanatoria make an attempt to follow up all patients discharged from their confines.[13] There is no set pattern as to follow-up procedures. In some instances the institution has a public health nurse who actually visits the ex-inmate at his home. If the patient goes to a town outside of the county in which the sanatorium is located, public health personnel in the home area are invited to interest themselves in the case. As previously set forth, the Division of Tuberculosis keeps a live file on all cases of tuberculosis needing public health nursing or medical supervision, including discharged sanatoria patients. In all cases the physician of the discharged patient, if any, is notified by the institution of the patient's homecoming status.

It has been remarked by Smillie[12] that small sanatoria of less than 100 bed capacity are economically impractical. Although all but five of Minnesota's sanatoria fall within this category, it is unlikely that they will be closed if cognizance is taken of the cases of tuberculosis which are being discovered in the state in the amount of 0.6 to 1.5 per cent of all persons (.6 per cent rural to 1.5 per cent urban) examined by mobile survey units.[6] According to Mark,[7] 0.1 per cent of all persons so examined need hospitalization for observation or treatment. Thus it may be assumed that the state could, with six mobile survey units working, find up to 9,370 cases of tuberculosis in 1949, out of an anticipated 625,000 screenings, and have need to hospitalize some 625 of these. Such a requirement might continue annually until the entire population of the state has been screened, a matter of perhaps four or five years. During 1947 1,020 new cases, out of a total of 1,782 admissions, were admitted to all Minnesota sanatoria from all diagnostic sources. Should a continuous five year mass survey be put into effect in the state, it is estimated that total annual figures for sanatoria admission during those five years will rise by at least 30 per cent over the 1947 figure.

Tuberculin Surveys

With emphasis being placed on mass x-ray surveys in Minnesota,[2] the tuberculin survey is now considered primarily as a useful complementary case-finding method to be stressed until such time as mass x-ray surveys can be carried out to the optimum in degree and frequency. Initiative in stimulating tuberculin surveys is now in the hands of local health agencies, both official and voluntary. Most of the surveys are carried out on school children. The parents of positive reactors are notified and urged to have their children x-rayed. Local voluntary anti-tuberculosis agencies often finance such radiological follow-up

at no expense to the child's family. Although it is highly desirable that positive reactors to the Mantoux test receive chest x-rays, there is good cause to conduct the survey for statistical and epidemiological reasons. A tuberculin survey will give an index of the rate of infection in a community and is helpful in locating sources of infection. Duplicates of all survey records in Minnesota are forwarded to the Division of Tuberculosis.

The low incidence of sensitivity to tuberculin among the youth of the state is indicated in a report by E. A. Meyerding,[8] of the Minnesota Public Health Association, who gives the following figures for Mantoux test surveys in St. Paul high schools in 1947.

TABLE III—RESULTS OF MANTOUX TEST SURVEYS, 1947

Nine Junior and Senior High Schools, St. Paul, Minn.

Sex	Enrollment	No. Tested	Per Cent	No. Negative	Per Cent	No. Positive	Per Cent
Male	1,671	1,250	75.40	1,193	95.44	58	4.64
Female	1,709	1,457	85.25	1,385	95.05	71	4.87
Total	3,380	2,707	80.08	2,578	95.23	129	4.76

Tuberculin testing in the schools of the state seems assured for some time to come through the county accreditation plan,[9] standardized by the Minnesota Department of Health, the Minnesota State Medical Association and the Minnesota Public Health Association. The plan requires that for a county to be dubbed a "Tuberculosis Accredited County" by the Governor of the State, it must have a tuberculosis death rate of lower than 10.0 per 100,000 population per annum and a naturally occurring infection rate (i.e., not produced by BCG vaccination) among high school seniors of less than 15 per cent. The latter fact is determined by tuberculin surveys. To date, only fourteen counties, all rural, have been accredited.

The rather complex requirements of the American School Health Association for certifying schools that meet specified health standards call for an elaborate system of school tuberculin surveys.[1] The certificates given are graded from Class A through Class D and represent lessening degrees of health practices in relation to tuberculosis control carried on within the school. Some 634 schools in the state have been granted certificates to date.

BCG Vaccination

At the present BCG vaccination plays no major part in tuberculosis control in Minnesota. The views of Myers[11] prevail with health officials throughout the state. It is felt that within an area having such a low incidence of tuberculosis as does Minnesota that the effort and expense of carrying out a mass BCG vaccination program would not yield benefits comparable to cost. Again, were the major portion of the citizenry to become Mantoux positive through such a program, the use of tuberculin surveys as a valuable epidemiological tool would be lost. True, certain groups in the state, such as Mantoux negative physicians, nurses and medical students have been urged to submit to the vaccination before entering work in tuberculosis. Probably all Mantoux-negative Minnesota Indians should receive the vaccine. The epidemiological wisdom of permitting and encouraging the Mantoux-negative status within the general population must be judged at a later date.

The Role of the Physician

In the face of an almost totally absent official public health organization at county level in Minnesota, the State relies heavily upon its practicing physicians to carry out basic tuberculosis control, particularly in its case finding and case control aspects. The state health department, while prepared to give expert advice and administrative leadership and furnish certain technical aids, cannot hope to operate ubiquitously both as a field-case-finding and case-controlling agency. Since 1913[3] tuberculosis has been a reportable disease in Minnesota. This fact assures that each case first brought to light by a practicing physician will be registered at state level so that the Division of Tuberculosis can, in theory if not in practice, follow the patient's life progress even if the physician does not.

Faced with a freshly uncovered active, progressive case of tuberculosis, the physician is in a dilemma as well as is the patient. A very complex medico-social problem will now proceed to vex patient, doctor and organized society. Free laboratory facilities,[3] placed at the physician's disposal by the state, will soon inform him if the case is open and infectious. If it is so, immediate hospitalization and probably collapse therapy are indicated, in order to convert an open lesion to a closed one, protect the community and perhaps cure the patient. If the patient consents, the dilemma is solved for the doctor and the hospital or sanatorium takes over. If the patient refuses, the physician may call upon the local or state

health authorities to invoke Regulation 1503 of the state health laws and Section 144.49 of the Minnesota Statutes.[10] The former regulation states that "a person ill with tuberculosis who neglects or refuses to obey the instructions of the State Board of Health or the local health officer in matters relating to the protection of others against the disease shall be placed under quarantine in a suitable place . . . . until such time as the danger of infecting others no longer exists." This means that the tuberculous person can be forceably placed in a sanatorium, if necessary.

Occasionally, in Minnesota today, the physician will compromise and the patient will stay at home, supposedly in isolation. When this happens the physician has a constant and irritating responsibility to the community to fulfill, playing watchdog on the case. It is in this type of instance that a public health nurse often renders good service in checking on the patient at regular intervals and bringing in family and other contacts for tuberculin and x-ray screening. In general, however, the present attitude of physicians in Minnesota is that open cases of tuberculosis should go to an institution. Few patients are in Minnesota sanatoria by court order; nearly all go willingly. Exclusive of the three metropolitan areas of Minneapolis, Saint Paul and Duluth, it is estimated that there are presently only fifty open cases isolated at home in the state.[6] Public education on the benefits of sanatorium care in tuberculosis control has brought about this favorable situation.

All active cases of tuberculosis encountered in private practice involve a major change in the life of each patient, whether he stays at home or goes to an institution for care. Welfare and other social agencies are dependent on the physician for technical advice in rehabilitating him. Even inactive cases must be conscientiously followed for years by the practitioner. There is a tendency, however, for state and local health and welfare agencies to assume more and more of the technical and administrative supervision of all cases of tuberculosis in the state, with the practitioner serving as a point of reference. More and more frequently, sputums and gastric washings are examined at the state laboratories and x-rays are sent to county sanatoria to be read. It is the sanatoria who actually decide upon admission of cases, the desirability of collapse therapy, surgery, degree of healing, et cetera, and not the referring physician. The latter, realizing that the management of tuberculosis is a highly developed specialty, is usually willing to relinquish control of his cases.

The use of county sanatoria as out-patient clinics, with public health nurses as trouble shooters, is presently favored in Minnesota. It appears that the tuberculous citizen, a potential threat to the health of all, is being regarded as a ward of organized society, and eventually he will be routinely sought out and diagnosed by public health agencies as a matter of the public interest and treated essentially through public medical services.

Conflicts

Tuberculosis control in Minnesota is dominated by the State Department of Health, but several important phases of the work are under the direct supervision of other governmental agencies. The management of the tuberculous within state institutions is the responsibility of the State Department of Institutions. Thus, all criminals and insane who develop the disease remain outside of the jurisdiction of the Division of Tuberculosis. All tuberculosis sanatoria, state and county, are operated under the State Department of Welfare. Simplicity of administration and centralization of control, features usually desirable in institutional operation, would indicate the combination of these functions under the State Department of Health.

Conflicts which arise between voluntary associations, such as the National Tuberculosis Association and its state and county sub-organizations and official agencies, apparently occur only occasionally on a personality basis. At policy level, and at operating level, the voluntary agencies are at the service of the official governmental health units, ready to furnish funds, material, transportation, personnel and enthusiasm in exchange for technical and administrative leadership in a common cause.[8]

Summary

Minnesota compares very favorably with the United States as to tuberculosis mortality and is developing an effective state directed case finding program through the medium of mobile unit chest x-ray surveys. Tuberculin surveys play an important role in the case finding program but have been relegated to voluntary health agencies for realization. BCG vaccination is not favored

(Continued on Page 379)

A SURVEY OF VALVULAR HEART DISEASE IN 1,000 CASES OF PULMONARY TUBERCULOSIS

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THERE is a popular belief that individuals suffering from mitral stenosis are less liable to acquire pulmonary tuberculosis than other individuals; and it is believed further, that individuals with pulmonary stenosis are more susceptible to tuberculosis than other individuals. Rokitansky expressed the former view when he wrote that the chronic passive congestion of the lungs resulting from heart disease usually excludes development of tuberculosis in the lung. Following this expression is the concept that mitral stenosis protected against pulmonary tuberculosis passed on through the literature; and, even as recently as 1944, Paul White stated that pulmonary tuberculosis is rare in the presence of mitral stenosis. He further stated that chronic pulmonary congestion resulting from mitral stenosis makes it difficult for the tubercle bacillus to gain a foothold. This concept that pulmonary congestion protects against the development of tuberculosis has been refuted by workers such as Calthrop, Hawes, Buckingham and Hoffman, Bishop and Babey, Stinson, Kremer and Shapiro, Roberts, Lisa, and Kellner. In general these observers have pointed out that the incidence of mitral stenosis in people suffering from pulmonary tuberculosis is about the same as its incidence in the non-tuberculous population. It is also their opinion that pulmonary tuberculosis is not more common in individuals with pulmonary stenosis than it is in the general population at large.

We became interested in this controversy and, as a result, reviewed the incidence at autopsy of chronic valvular heart disease in 1,000 individuals in whom tuberculosis was found. These cases represent the total number of individuals who have either died or suffered from tuberculosis in a series of 10,000 necropsies performed at the Ancker Hospital by Dr. John F. Noble from 1925 to 1948. Only those individuals who were proven to have had tuberculosis at some time are included in the series. Only those patients, too, in whom valvular heart disease could be demonstrated at the autopsy table are included in the series. It was found that there was some degree of heart involvement in 17.7 per cent of the thousand cases of pulmonary tuberculosis that were reviewed to date. The mitral valve was involved in 11.1 per cent and a frank advanced mitral stenosis in 0.5 per cent. The aortic valve was involved in 9.7 per cent and the tricuspid valve in 0.7 per cent. The pulmonary valve showed a slight change in about 0.5 per cent of the cases. Of the ninety-seven patients with aortic valve defects, the greater number occurred in males; while mitral lesions predominated in females. The average age of the individuals in the survey was sixty-five years; the average age of those with aortic valve defects was sixty-eight years; and those with mitral valve lesions 62.7 years.

The chief causes of death in these 1,000 cases of pulmonary tuberculosis were: tuberculosis in 49.3 per cent and heart disease in 8.2 per cent. In the remainder, death occurred from various other illnesses. The incidence of valvular heart disease in this series of cases of 17.7 per cent compares with a reported high of 29 per cent and a low of 0.24 per cent by other authors. The relatively high figure in this series may be accounted for by the fact that it includes those cases in which acute terminal valvular endocarditis was present at the time of the autopsy. It is also recognized that the incidence of valvular heart disease is usually higher in an autopsy series of patients than in series bases on clinical diagnosis. By far the greater number of lesions involved the mitral and aortic valves; the tricuspid and pulmonary valves, as was to be expected, being seldom involved.

As regards the statement that the incidence of pulmonary tuberculosis is abnormally high in individuals with pulmonary stenosis, it is interesting to note that no true pulmonary stenotic valve defect occurred in this group. It is also interesting that the rate of occurrence of aortic valve defects is essentially the same as that reported by Doctors Clawson and Bell.

The incidence of frank mitral stenosis in our series falls well within the range of the rates

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published by others for patients suffering from tuberculosis and also is about the same as that in the non-tuberculous population of this area. It is our belief that evidence is accumulating to indicate that the incidence of mitral stenosis in tuberculosis patients is about the same as in the non-tuberculous group in the same area. Because of this we feel that the old dictum that pulmonary congestion incidental to heart disease protects the patient from tuberculosis is fallacious.

Summary

The incidence of valvular heart disease at Ancker Hospital in 1,000 patients dying from or having suffered from tuberculosis is 17.7 per cent.

The aortic valve defects predominated in the male, and mitral defects predominated in the female.

Frank advanced mitral stenosis occurred in 0.5 per cent of the patients with pulmonary tuberculosis, and this incidence is essentially the same as that which occurs in this area among non-tuberculous patients.

It is recognized that the number of cases studied is statistically insignificant, but this study seems to indicate that the theory that mitral stenosis protects against pulmonary tuberculosis is probably incorrect.

The authors are indebted to Dr. John F. Noble for his suggestions and criticisms.

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THE CONTROL OF TUBERCULOSIS IN MINNESOTA

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except for certain small, special population groups. At the present, Minnesota is well supplied with sanatoria beds (3.9 per annual death), but anticipates a need for more beds for at least a five year period during and after the mobile unit x-ray surveys of the entire population are completed. The private practitioner is still the key agent within the state for diagnosis plus treatment and follow-up of the tuberculous, but his role, eventually will probably be assumed by public health and medical services. The chief deterrents preventing official state health agencies from assuming complete control of the tuberculous are a serious lack of trained official personnel, especially public health nurses, organized at county level to carry out follow-up procedures adequately, and a lack of administrative control over certain state institutions and county sanatoria that shelter tuberculous patients.

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POSITIONS OF THE PATIENT—THEIR EFFECT ON SPINAL ANESTHESIA

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WHILE changes in the position of the patient are important everywhere in surgery, they are particularly so in spinal block. Incorrect positioning of the patient can mean (1) failure to produce proper anesthesia, (2) death of the patient, (3) permanent damage, (4) nerve injuries, and (5) restlessness, which may simulate unsuccessful or waning spinal block.

The effects produced by the various positions in which the patient may be placed are (1) those of gravity, in which the levels of (a) the head and feet, (b) the left and right side, or (c) the front and back may be different, and (2) those where the levels of the different parts of the body are not changed but the interrelationships of the various parts are themselves altered. The following is a list of the positions most commonly used in anesthesia and in surgery.

1. Dorsal, or supine: lying on back.
2. Dorsal recumbent: supine, legs flexed and rotated out.
3. Elliot: supine, support under small of back (for operation on the gall bladder).
4. Lateral recumbent: on side, upper thigh and knee drawn up.
5. Kraske, Depage: prone, with pelvis elevated.
6. Lithotomy, or dorsosacral: on back, legs and thighs flexed.
7. Prone: face down.
8. Sitting.
9. Trendelenburg. The Trendelenburg position is distinguished from the head down position, as it includes (1) 45 degrees of head-lowering, (2) flexion of the knees.
10. Scultetus, head-down: on inclined plane, with head down.
11. Fowler, reversed Trendelenburg: head up.
12. Unilateral: lying on side.
13. Kidney: unilateral, with lateral flexion.
14. Unusual positions, for those who cannot assume standard positions (arthritis, ankylosis, spinal injuries, previous operations).

What the surgeon wants to know:

1. What position should be used for giving the spinal anesthetic?

2. In what position should the patient be placed immediately after giving the spinal anesthetic?

3. How soon may the head be lowered?

4. What position should be used after operation?

5. How long should the patient be kept in bed?

Causes of Death from Spinal Block

Shock.—

1. White sympathetic rami theory. According to this theory, vasoconstrictor impulses are carried in the white rami of the sympathetic nervous system. These impulses stream upward into the lowest part of the cord and downward in the uppermost part, so that a block up to the upper thoracic region effectually blocks such fibers running to all parts of the body. If these fibers are blocked in performing subarachnoid nerve-root block, it is to be expected that spinal anesthesia will be associated with a fall in blood pressure and that higher levels of anesthesia will be attended by more profound lowering of the blood pressure.

2. Adrenal theory. This theory, advanced by Pitkin, asserts that the fall in blood pressure is brought about by a paralysis of adrenin secretion caused by paralysis of the sympathetic nervous system. According to this theory, spinal block up to the sixth thoracic segment paralyzes the autonomic nerves to the adrenal glands and thereby brings about a blood pressure fall.

3. Some cases are not explained by either theory.

Babcock states:

"If the lower eleven dorsal and the first three lumbar roots are completely blocked, every blood vessel in the body, from the vertex to the toes, is completely relaxed; the heart rate falls to 40, 50, or 60; no pulse may be felt at the wrist; and while there may be a soft, faint pulse in the carotids, with a completely relaxed vascular system and a partially relaxed muscular system, the blood lies in the dependent portions of the body as in a cadaver. The skin is pale, and incisions through nondependent portions of the body are dry and bloodless."

Respiratory Paralysis.—Paralysis of the intercostal muscles occurs commonly in spinal block, as it does in inhalational anesthesia. It must be remembered that the thoracic nerves which supply the skin and the muscles of the anterior abdominal wall also innervate the intercostal muscles. If skin anesthesia is desired up to the nipple line,

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which would correspond to the fourth thoracic segment, motor block, which may lag some two segments behind, will surely reach as high as the sixth thoracic segment. Thus the lower six thoracic nerves on each side and the lower six intercostal muscles on either side are blocked and half of the musculature of the chest wall has been paralyzed. It is obvious, therefore, that (1) spinal block is commonly associated with some degree of respiratory depression and (2) higher levels of spinal anesthesia are associated with more severe degrees of respiratory depression. When the anesthesia has reached the first thoracic segment, all intercostal muscles are paralyzed. The patient in this situation carries on respiration with the diaphragm alone. Breathing will be of the paradoxical or negative or rocking-chair type. The chest wall, instead of rising during inspiration, will fall here and rise during expiration. Should the spinal block reach as high as the fourth cervical segment, the phrenic nerve, which is derived from the third, fourth (chiefly), and fifth cervical segments, will be paralyzed on either side, and respirations will cease.

Anatomy

The two most marked curves in the spinal column are opposite the third lumbar (anterior) and fifth thoracic (posterior) vertebrae. In the lithotomy position, the lumbar curve is obliterated. In the lateral position, the influence of the spinal curves is eliminated.

Variations in position, including those involving gravity effect and those involving alteration in interrelationships of various parts of the body, produce, in spinal block, alterations in (1) the cerebrospinal fluid, (2) circulation, (3) respirations, and bring about the following clinical effects:

Height of Anesthesia.—This is a function of the spreading cephalad of the anesthetizing solution injected. If skin anesthesia is desired up to the nipple line, corresponding to the fourth thoracic segment; and lumbar puncture is performed at the second lumbar interspace, a spread upward of ten spinal segments is required. Specific gravities of the various fluids and solutions involved are listed here for this purpose:

Cerebrospinal fluid: 1.001 to 1.009, average 1.007
Procaine, 10 per cent in water: 1.015 to 1.018
Metycaine, 10 per cent in water: 1.0145
Nupercaine, 0.5 per cent in saline: 1.0037
Pontocaine (tetracaine), 1 per cent in saline: 1.0065 to 1.0068; 0.5 per cent in saline: 1.0069
Ten per cent dextrose solutions: 1.030

Duration of Anesthesia.—For a given volume and total dose of anesthetizing solution, a higher level of anesthesia will obviously be associated with a shortened duration of anesthesia. Where a small dose (and a prolonged duration of anesthesia) is desired, for the production of a low anesthesia, the solution should be confined to the lower segments during the period immediately following its injection, to prevent it from spreading upward and from being wasted in unnecessarily anesthetizing higher nerve roots not involved in the surgical procedure contemplated.

Symmetry of Anesthesia.—If the spinal block has been performed in a unilateral position, and the patient has been kept in that position for five or ten minutes following the block, the anesthesia will be found to be asymmetrical. If the solution is heavier than spinal fluid, the level of anesthesia will be higher on the lower side; for a lighter solution, the anesthesia will be higher on the upper side.

Hypotension.—It has been shown above that, in general, higher levels of anesthesia, brought about by gravity effects produced by head-raising or head-lowering, are associated with more profound lowering of the blood pressure.

Respiratory Depression.—Depression of the respirations, as described above, is directly proportional to the spread upward through the thoracic spinal segments.

Nausea and Vomiting.—These, too, are more commonly seen in higher levels of spinal anesthesia. Hypotension associated with high anesthesia has been stated to be a cause of nausea and vomiting. Relaxation of the sphincters, often followed by the entrance of bile into the stomach, may be a factor in bringing about this complication.

Headache.—This symptom may be due to hypotension also. Leaking of the cerebrospinal fluid through the lumbar puncture is most generally asserted to be the cause of postspinal headache. The incidence of headache following spinal puncture or spinal block is fairly high and probably amounts to about 5 per cent. The headache does

not appear immediately following the puncture or block, but occurs typically when the patient sits up; it is usually severe and is relieved by lying down.

Comfort of the Patient.—It is essential, since the patient remains conscious during the entire operative procedure, that he be made as comfortable as possible. Often, during the latter part of the surgical procedure, he may become uncomfortable and markedly apprehensive. This is often interpreted as being due to a waning of the spinal block. The diagnosis can usually be made if it is noted that his pain does not correspond accurately to the surgeon's manipulations, and if the patient is unable to move his feet.

Convenience of the Surgeon (operating conditions).

The following techniques involve the use of gravity control: Barker (glucose), Babcock (heavy or light solutions), Pitkin (light solution, tiltometer), Sise (both), Labat (no vasoconstrictors), Maxson, Vehrs (gravity effect used only after fixation of drug), Jones (light, prone, to soak posterior roots), Wilson (light, sitting position), Sise (pontocaine-glucose).

Positions

Trendelenburg and Head-Down Positions.—Koster and Labat both insisted on the head-down position immediately after spinal block, to guard against cerebral anemia. Labat maintained this position for three hours after operation. Vehrs used the Trendelenburg position early but not immediately following spinal block.

Advantages: (1) it aids in bringing blood to the brain and thus insures the best possible blood supply to the vital medullary centers, (2) it aids in bringing blood from the abdomen to the heart, (3) it facilitates gravity convection. Other factors involved in spreading the solution are dispersion (mixing due to the actual injecting) and diffusion (gradual mixing, because of difference in concentrations).

Others (Grodinsky and Baker) object to the use of the head-down position as: (1) the anesthetic gravitates toward the higher centers or may simply become high; (2) the duration of anesthesia is shortened; (3) the patient is uncomfortable (this position should not be maintained too long following operation as most patients dislike it intensely); (4) the patient is in a physiologically abnormal position; (5) the respirations are embarrassed; the diaphragm and subphrenic viscera assume a more cephalad position and the patient is required to lift the weight of the abdominal viscera with each inspiratory effort; (6) it increases venous congestion in the head and neck. These workers and others use the Trendelenburg position only when there is vasomotor collapse and cerebral anemia.

Greenberg, Visscher, et al, have shown that ruminants held on their backs for over a few hours will die of pulmonary congestion, alveolar hemorrhage, and interstitial edema.[1]

When the Trendelenburg position is assumed soon after injection, the head and neck should be raised, to prevent the anesthetizing solution from affecting the higher centers. In the head-down position, the effect of gravity is not to move the drug in high concentration to the most dependent parts but to spread it out in ever-decreasing concentration over a distance proportional to the volume of drug injected.

Fowler Position.—This is a comfortable position. Slight Fowler position produces, in gallbladder or gastric surgery under spinal anesthesia, a striking falling away of the abdominal viscera from the field of operation.

Prone Position.—Breathing is difficult in this position, as it is necessary for the patient to lift a considerable part of his body weight with each inspiratory effort. Severe fall in blood pressure may be associated with the prone position, as is often shown by a return to normal on restoring the patient to a supine position. As both falls in blood pressure and respiratory depression are commonly seen when the patient has been placed in the prone position, both of these may be accentuated where spinal block, known to produce these complications of itself, has been performed.

Kraske Position.—Hypotension occurs commonly following the use of the Kraske position. It is often advantageous, for hemorrhoidectomy and for repair of rectal fissure, to employ caudal and sacral block.

Lithotomy Position.—Breathing is slightly difficult in this position, but for low rectal work this is probably superior to the Kraske position.

Lateral Position.—Breathing may be difficult in the lateral position. There is compression of the lower lung and some slight gravity resistance on inspiration. This position is used particularly where an asymmetrical or unilateral anesthesia is desired. The advantages of unilateral anesthesia are: (1) only the affected part is anesthetized, (2) a long anesthesia can be obtained, and (3) where the anesthesia is largely one-sided, there may be very little fall of blood pressure (in this regard, it may be recalled that first stage sympathectomy for hypertension is followed by no fall in blood pressure), (4) there is probably less respiratory depression where the anesthesia is largely one-sided.

Disadvantages: (1) the production of a one-sided anesthesia is uncertain, (2) somewhat more positioning is needed for this procedure, and (3) where the patient is to be operated in the supine position, he must be kept on his side for a period that is longer than usually required.

The dangers of spinal shock are its effects on the brain and heart. The warnings of cerebral anemia are: (1) rising pulse rate (the parallelism between pulse rate and blood pressure, typical of spinal block, is here broken), (2) increasing fall in blood pressure, (3) increasing pallor, and (4) possibly increased abdominal pulsations.

Injection

Sitting.—This is the easiest position for the performing of spinal block, as (1) the median plane is well defined, and (2) the pressure on the cerebrospinal fluid is greater, so that the fluid will drip freely from the needle when it has been correctly placed. When lumbar puncture is performed in the lateral position, the fluid is under very little pressure and may only ooze from the hub of the needle. The sitting position is used for low anesthesia ("sitting-bull" spinal; for work on the anus and external genitals). This position is used commonly where heavy solutions are employed. It is also used with light solutions, employing the Wilson technique. When spinal block is performed in the sitting position, it is of distinct advantage to put the patient's feet on a stool.

Lateral.—This position can be used for either light or heavy solutions. The patient is placed on his side when a high level of anesthesia is to be obtained. In this position the median crease sags and it is necessary to determine the location of the needle point in three dimensions. The anesthetist will need to find the median plane in addition to directing the point of needle cephalad or caudad. In this position, as has been mentioned above, the cerebrospinal fluid pressure is low. If the patient is to be operated on in the lateral position, the affected side is up, a light solution is used, and the patient is not turned after spinal block has been performed; or the affected side may be kept down and a heavy solution used and the patient turned to the other side when the anesthetic level is high enough. If the operation is to be done with the patient on his back, the affected side is down for heavy solutions, up for light. It will be found helpful, particularly where there is considerable sag in the median crease, to place a pillow under the lower back, so as to straighten out the spinal column.

General.—No wrestling holds should be used, as they tend only to increase the tonus of the skeletal muscles. The patient should be instructed, whether in the lateral or sitting position, to attempt to bring his nose and his knees together.

After injection, one should wait five to ten minutes before turning the patient.

Heavy Solution.—(1)For low anesthesia, the patient is kept in a sitting position for at least two minutes. (2) For anesthesia to the umbilicus, the table is kept flat for ten minutes, then the head may be lowered. (3) For anesthesia to the costal margin, the head-down position at 10 to 15 degrees is maintained until the anesthesia is high enough; a level position is then maintained for ten minutes, then Trendelenburg position if desired.

Light Solution.—(1) For low anesthesia: lateral or flat position, then Trendelenburg. (2) For anesthesia to the umbilicus, flat position, very slight head lowering. (3) For anesthesia to the ribs: 10 to 15 degrees Fowler position until high enough, then flat for ten minutes.

Isobaric Solution.—Theoretically, any position may be used. The effects are uncertain, as the solution may actually be heavier or lighter than the patient's spinal fluid. Isobaricity is probably not desirable, as the anesthetizing solution cannot be made to spread far. Isobaricity probably is of no advantage even though the claim made for it be true. A distinct danger may be presented, as a

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ADVANTAGES OF A SEPARATE NURSERY FOR PREMATURE INFANTS

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ANY LIVE-BORN child weighing less than 2,500 grams is considered premature, regardless of the period of gestation. All live-born premature infants should be included in this group; evidence of life being heart beat or breathing.[7]

Prematurity takes a higher toll of infant life than any other pediatric condition and is one of the ten leading causes of death. It caused 33,120 infant deaths during 1944. It is given as the cause of death in 47 per cent of all neo-natal cases. According to Potter, it is the direct cause of 25 per cent of all deaths under one year of age and is a contributing factor in another 25 per cent.[5]

Why is prematurity itself a cause of death? The immediate reason is the inability of the premature organism to support life. The lung of the premature may not be able to carry on adequate oxygen exchange for survival. The nearer the infant is to term, the larger is the capillary bed in contact with the alveolar lumen. The fetal alveoli are lined with cuboidal epithelium and, as the fetus grows, the capillaries push between the cells so that they are in contact with the alveolar spaces. If the capillary bed is inadequate, the fetus cannot survive.

TABLE I. COMPARISON OF MORTALITY RATES BY STANDARD WEIGHT GROUPS IN AUTHOR'S SERIES

Before and after establishment of separate nursery for premature. Hess' figures from Chicago.

		1000 Gms.	1000-1250 Gms.	1250-1500 Gms.	1500-2000 Gms.	2000-2500 Gms.	Total
1940-45	Cases	12	7	6	30	41	96
	Died	12	5	5	9	2	33
	Mortality	100%	71%	83%	39%	5%	34.3%
1945-47	Cases	13	8	12	53	90	176
	Died	12	7	2	7	3	31
	Mortality	92%	88%	16%	13%	3%	17.6%
Hess	Cases	247	286	465	1391	1359	3748
	Mortality	87%	62%	43%	22%	11%	27 %

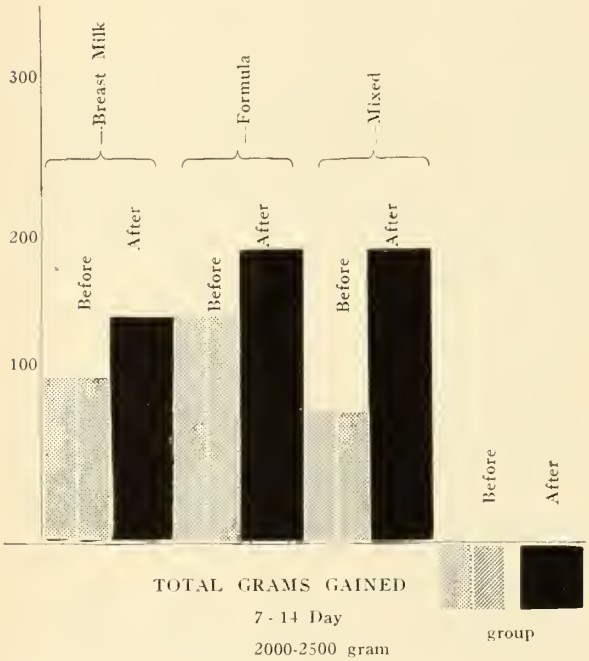


Fig. 1. Amount gained between seventh and fourteenth days in infants on breast milk, artificial food and mixed feedings.

A second factor in premature mortality is the incomplete development of the kidneys. The glomerular development continues until the thirty-sixth week of intrauterine life. Tublar development is incomplete at term.

The gastro-intestinal tract of a premature is less able to digest food than is that of the full-term infant. The digestive glands are smaller and fewer in number, but, on the whole, the digestive system is relatively more mature than either the lung or kidney.[6]

Flax[3] gives the causes of death as shown in Table II.

TABLE II. CAUSES OF DEATH

	Per Cent
1. Atelectasis	24.2
2. Prematurity	22.8
3. Bronchopneumonia	15.07
4. Diarrhea	12.44
5. Cranial Injury	11.05
6. Syphilis	4.61
7. Other causes	10.44

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TABLE III. DURATION OF HOSPITAL STAY BEFORE AND AFTER ESTABLISHMENT OF SEPARATE NURSERY.

		Below 1000	1000-1250	1250-1500	1500-2000	2000--2500
Before	Cases	0	2	1	19	38
	Days	—	43	41	36.3	18.9
After	Cases	1	1	10	46	85
	Days	74	76	53.9	32.3	21

Dunham[6] groups the causes as:

1. Prematurity, especially in the low birth weight group.
2. Infection.
3. Intracranial hemorrhage.
4. Congenital defects.

In the first forty-eight hours of life, the main causes of death are asphyxia, atelectasis, and intracranial hemorrhage. After this time, the chief cause is acute infection, especially bronchopneumonia.

TABLE IV. MORBIDITY FIGURES BEFORE AND AFTER ESTABLISHMENT OF SEPARATE NURSERY.

No. Cases Before	No. Cases After	Diseases
1	—	G. C. Ophthalmitis
1	—	Pemphigus Neonatorum
1	6	Upper Respiratory Infection
—	6	Diarrhea
—	2	Pneumonia
—	1	Atelectasis

TABLE V. CAUSES OF DEATH BEFORE AND AFTER ESTABLISHMENT OF SEPARATE NURSERY.

	Prematurity	Atelectasis	Broncho-pneumonia	Intracranial Hemorrhage	Congenital Anomalies	Diarrhea	Maternal Complications	Intra-abdominal Hemorrhage
Before	33	11	1	5	2	0	5	1
After	31	5	3	2	4	2	7	0

Arey[1] was able to demonstrate an adequate cause of death in twenty-one of twenty-two consecutive autopsies on prematures.

There are two approaches in attacking the problem of prematurity; first, the prevention of premature births; and second, improved methods of caring for the infant born before term. In this paper, we are concerned only with the second group of factors.

Flax[3] attributes a reduction of premature mortality at Charity Hospital, New Orleans, to the following factors:

1. Segregation of prematures from the general nursery.
2. Care by graduate nurses.
3. Use of breast milk for all infants under three pounds.
4. Use of oxygen routinely.
5. Close co-operation between the obstetrical and pediatric groups.

At St. Barnabas Hospital, Minneapolis, from January, 1940, through October, 1947, there were 10,669 deliveries with 272, or 2.5 per cent premature births.

In the early part of 1945, a separate premature nursery was established. This consisted of two rooms with an adjoining utility room; one room for clean and one for isolation cases. This set-up was entirely separate from the newborn nursery, being on another floor. It was manned by a separate staff. A graduate nurse was on duty twenty-four hours daily. Prior to this time, the prematures were cared for in the newborn nursery. These infants were supervised by the general medical staff of the hospital, the larger group being cared for by men engaged in general practice. There was no attempt to follow a standardized routine, each man using his own methods.

Before the nursery opened there were 99 prematures with a mortality of 34.3 per cent. From February, 1945, through October, 1947, there were 176 premature infants born with a mortality of 17.6 per cent, or about a 50 per cent reduction in mortality. When these figures are broken down into standard weight groups, we find that the majority of improvement has come in the weight groups from 1,250-2,500 grams.

Hess' figures are given for comparison (Table I).

An attempt was made to determine any advantage in feeding breast milk or any special type of artificial feeding. No significant difference could be noted. There was, however, a great increase in rate of gain when the prematures were cared for in a separate nursery (Fig. 1).

The hospital stay before and after the establishment of the nursery was compared. There was no apparent advantage noted (Table III).

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TRACTOR DRIVERS' COMPLAINTS

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TECHNOLOGICAL developments in recent decades have added to the repertoire of medical syndromes. Among the more notable are caisson disease, aerotitis and aerosinusitis, asbestosis, and so on.

During several years of rural practice, the writer observed that even so innocuous-appearing an activity as driving a farm tractor can produce distressing symptoms. The most common was lower backache, or "tractor back," as it is called in some localities. From this rather obvious sequel, the gamut of complaints ranged through neck stiffness and extremity pain, to digestive upsets, frequent stools, heartburn, urinary frequency, and dizziness. Some of these were not easily traceable to tractor-driving. In fact, the writer was put to considerable effort on several occasions before he was able to exclude other maladies, and, upon eliciting a history of long hours on the tractor, assure himself of the correct diagnosis. Additional proof was obtained when the symptoms promptly subsided with cessation of tractor work. In a few cases it was deemed necessary to x-ray the gastrointestinal and even the genitourinary tracts, to exclude organic lesions.

Mechanism of Injury

The complaints occurred primarily during the seasons of "heavy" tractor work, like plowing and discing, and when the ground was hard and rough. In the spring, the farmers suddenly change from the comparative inactivity of winter to the hustle and bustle of preparing the fields. Their muscles are temporarily unaccustomed to the punishment they must undergo. The tractor lurches to and fro and from side to side in a modified version of a bucking broncho. Overambitious farmers, aware that their machines never require rest, drive themselves through long days of twelve to eighteen hours. Even the hardiest bodies cannot withstand this kind of strain for long.

The average tractor is equipped with a simple molded steel seat, shaped like the scoop of a grain shovel. This seat is attached to the tractor frame by a single-leaf steel bar-spring, which permits only limited flexibility. These seats are notoriously uncomfortable. Many a farmer has discarded this standard seat and equipped his tractor with a "hydraulic seat." To my knowledge, only one tractor manufacturer is featuring this type of seat as standard equipment.* Several farmers have informed me that the "hydraulic seat" helps eliminate the violent up-and-down bumps, but does nothing to the side-to-side lurches which are even more troublesome. So far, tractors have not had "knee-action" wheels. However, a certain tractor manufacturer† has recently come out with "knee-action" front wheels, which will certainly absorb some of these lurches, although the major side-to side lurches undoubtedly come from the rear wheels. Most farmers have discovered their own method of minimizing the bumps. They stand on the tractor chassis with slightly flexed knees, through which the shocks are absorbed.

The patients interviewed agreed readily that their speed, especially over rough ground, contributed directly to their symptoms. Rubber tires, make of tractor, age, height and weight of the driver, bore no relationship to complaints. Apparently the whole process is one of violent continuous twisting and straining of the back muscles and ligaments, with concussion of the abdominal viscera in certain cases. This concussion seems the most likely explanation for the loss of appetite, digestive upsets, epigastric soreness, flatulence, and diarrhea mentioned in Table I. Sometimes the abdominal muscles will actually be tender to the examiner's touch. The sore stiff neck which some patients complained of was due to twisting around frequently, to observe the plow or other implement being pulled by the tractor.

Treatment

The "hydraulic" tractor seat is partially successful in easing the shocks and jars of tractor driving. If the interest of agricultural manufacturers could be aroused, it might be possible through research to develop a seat which would eliminate all the bumps and lurches. It seems to me that this would be the ideal solution of the problem. In the meantime, the following measures are useful in preventing symptoms.

1. Shorter work periods on the tractor, especially at the beginning of spring work.

*Massey-Harris Company, Racine, Wisconsin.
†John Deere Farm Equipment Company, Waterloo, Iowa.

TABLE I.

Patient	Age	Weight	Height	Make of Tractors	Type of Seat	Symptoms
R. M.	23	140	5'8"	Allis Chalmers	Spring bar Later hydraulic	Abdomen shaken up. Digestive upset. Anorexia
P. F.	50	158	5'8"	Farmall	Hydraulic	Lower backache. Stiffness
F. E.	55	180	5'10"	Farmall	Spring bar	Dizziness. Pain in right arm and leg
C. L.	38	165	6'3"	Allis Chalmers	Spring bar Later hydraulic	Soreness in epigastrium. Gastrointestinal x-rays negative
H. H.	39	165	5'9"	Allis Chalmers	Spring bar	Low backache
H. D.	30	173	5'11"	Oliver	Coil spring	Stomach shaken up. Slight backache
L. W.	43	162	6'1"	McCormick Deering	Coil spring	Low backache. Pain in right flank. Urinary frequency. Kidney x-rays negative
H. K.	38	175	6'	John Deere	Spring bar	Lower backache. Stiffness
H. F.	67	130	5'6"	Farmall	Spring bar	Pain in small epigastric hernia
E. C.	36	170	5'8"	Allis Chalmers & Farmall	Hydraulic Spring bar	Stomach shaken up. Flatulence
S. W.	41	212	5'11"	Mpls. Moline	Spring bar	Sore stomach
M. J.	33	165	6'	Farmall	Hydraulic	Stomach cramps and frequent stools
H. N.	56	191	5'11"	John Deere	Spring bar	Severe low backache
O. L.	46	135	5'8"	McCormick Deering	Spring bar Later hydraulic	Pain left side abdomen. Better after hydraulic seat
J. W.	48	155	5'8"	Farmall	Spring bar	Pain in hips. Pain and stiffness in neck
L. C. Jr.	20	135	5'8"	John Deere & Farmall	Spring bar Spring bar	Backache. Headache
R. B.	28	135	5'10"	Caterpillar	Coil spring	Stiff neck. Stomach cramps. Gastrointestinal x-rays negative
L. C. Sr.	46	145	5'9"	John Deere & Farmall	Spring bar Spring bar	Low backache
P. K.	48	160	5'6"	Allis Chalmers	Spring bar	Aching arms. Stiffness and pain in neck
M. N.	31	200	6'1"	Farmall	Hydraulic	Heartburn. Stomach shaken up. Gastrointestinal x-rays negative
S. P.	66	175	5'8"	Farmall	Spring bar	Severe pain, soreness across upper abdomen
H. F.	43	175	5'11"	John Deere	Spring bar	Low backache
B. B.	21	150	5'10"	Farmall	Spring bar	Heartburn. Stomach pain

TABLE II. COMPLAINTS IN 23 PATIENTS

Complaint	No. of times Encountered
Backache	10
Indigestion (heartburn, vomiting, anorexia, cramps, loose stools)	7
Abdominal soreness	5
Sore, stiff neck	3
Pain in extremities	2
Other symptoms (headache; dizziness; urinary freq.)	3

2. Reduced speed over rough ground.

3. Standing on the tractor chassis, with knees slightly flexed, to absorb shock.

4. Abdominal and/or back supports for selected cases.

The treatment of symptoms is on an empirical basis. Cessation of driving for indefinite periods is, of course, of prior importance.

Summary

An enumeration of the symptoms suffered by a small group of farmers directly attributable to tractor-driving is made. The mechanism of production of these symptoms is discussed, as is their prevention and treatment. The most important point is recognition of the more unusual manifestation of this condition, so that correct advice and treatment will be instituted.

ADVANTAGES OF A SEPARATE NURSERY FOR PREMATURE INFANTS

(Continued from Page 385)

Morbidity—Statistics seem to favor the series before the separate nursery was established, but a check of the records before 1945 would indicate that the difference was probably due to more adequate records since opening the separate unit (Table IV).

Causes of Death—The number is not large enough to be statistically significant, but it is encouraging to note that there is still room for improvement in the theoretically preventable causes of death (Table V).

Conclusion

1. A comparison of results before and after the establishment of a separate premature nursery revealed a lowering of premature mortality by approximately one-half.

2. Care by interested graduate nurses in a separate nursery, is a most important factor in lowering the death rate among premature infants.

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ST. CLOUD CANCER DETECTION CLINIC

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THE INTEREST shown in the type of Cancer Detection Clinics held in Fergus Falls over a year ago[1] and again, more recently, in St. Cloud, leads to this report of some of the reproducible details of the latter. The Stearns-Benton County Medical Society set the date of the clinic for a Saturday; decided to use a high school for the place of the examinations; limited the number of examinees to 300 adults, without specification as to status of their health; and appointed a committee of three to take care of all details. There was to be no charge and all services were to be free except for traveling expenses of five specialists who were to be brought in from the Twin Cities to help the volunteer local physicians. All unavoidable expenses were to be paid by the Minnesota Health Department and the Minnesota Branch of the American Cancer Society.

Registration

The American Legion Auxiliary was given the responsibility of registration of examinees in St. Cloud and out-lying areas. Ten phones on two phone numbers were continuously busy until the quota of 300 appointments was reached, this occurring by noon of the second day. And the phones continued ringing for the next two weeks prior to the clinic day in spite of newspaper and radio announcements that the registration was filled.

A systematic card system of the examinees was arranged according to time of appointments (9:00 A.M., 10:30 A.M., 1:00 P.M., and 3:30 P.M.) and alphabetically. Appointment cards were sent out by mail. These were later collected at the entrance of the examination center where they were exchanged for the examination forms (supplied by the Kansas State Medical Society) to be used in the clinic. The examinee's name, address and family physician's name were typed on these forms in advance. Only eight of the 300 registered cancelled their appointment and everyone came on time.

The registration had been preceded by a few days of radio and newspaper publicity which included information concerning organizations and people participating; there were advertisements supported by the druggists in each locality throughout the two counties involved.

Examination

The responsibility for different aspects of the examination was given by the medical society's committee to various women's organizations: The Stearns-Benton County Medical Auxiliary recorded the past histories of the examinees. The local registered nurses and nurses aides responded generously to help with the examinations. The St. Cloud Health Council was responsible for supplying all the lay help. Among other duties, these people directed traffic and served a light meal for the workers. A mobile x-ray unit for chest examinations was supplied by the Minnesota Health Department.

The personnel functioning in the clinic at any one time included: fourteen physicians, twenty-two graduate nurses, twelve nurses aides, and twenty-eight laywomen.

Upon presenting their appointment card at the desk near the high school entrance, examinees were given their history and examination form to carry with them through the entire examination. They were directed to the gymnasium where their past medical histories were checked through on the examination forms by eight women familiar with such procedures. From there, both men and women proceeded to have their ears, nose and throat examined by two specialists. They then separated to the dressing rooms on different floors of the school where they disrobed; women, to a dress or a cotton robe and shoes; and men to trousers and shoes. Their weights and temperatures were taken, and the remainder of the examinations of the two sexes were conducted separately.

Five screened examining tables were used for vaginal and abdominal gynecologic examinations. An equal number of physicians, nurses and recorders of findings worked together in teams of three persons. Speculae were cleaned and sterilized in xylene. The women's examination were completed in rooms with four additional tables where the breasts, heart, chest and skin were considered.

The men stopped at two places for abdominal and rectal examinations and skin, heart and chest surveys. Proctoscopic examinations were not performed unless the patient's history indicated the need.

Results

Of the 292 people examined, there were 213 females and seventy-nine males. The latter generally accompanied their wives. The examinees were responsible citizens of the community. One hundred and twenty had a positive history of cancer in the family. There were 392 surgical operations tabulated in the entire group or 130 per cent, thus averaging more than one per person examined. There was no indication of extreme neuroticism in the group. The conditions checked as positive in the histories were so numerous as to invalidate the accuracy of any summary of the reports. One hundred and sixty-six or 57 per cent were referred to their family physician for further study or treatment. Of these, fifty-five examinees required biopsies.

Of the twenty-five precancerous manifestations found, there were four kraurosis vulvae, sixteen keratosis and one each of cervical erosion, thyroid nodule, chronic hoarseness, and a mole. The twenty-four possibly cancerous lesions included eleven nodules in the breasts and either one or two cases of the following: cervical papilloma, large pelvic mass, postmenopausal discharge, cervical lymphadenopathy, rectal ulcer, rectal papilloma, melanoma of back, papilloma of inner canthus, mass in the cervix, basal cell cancer of cheek, and one ovarian cyst.

There were 177 disease processes found exclusive of the precancerous and possibly malignant conditions listed. Those of the gynecologic examination included seven cervical polyps, six cervical erosions, three cervical ulcerations, five cystoceles, four rectoceles and three cases or less of the following: leiomyomata of the uterus, enlarged uterus, pedunculated tumor of the uterus, prolapsed uterus, cervicitis, nodular cervix, vaginal discharge, trichomonas, tumor of the labia, vulva excoriations and cyst of the vulva.

It is regretted that a satisfactory follow-up has not been possible. The examinees were notified by postal card to contact their family physicians for the findings of the Cancer Detection Clinic examination. The 166 who were to have additional examinations or to be given treatment were notified twice to contact their physician. Of the 270 chest x-ray examinations, there were two suspicious of tuberculosis. No tumor masses were found.

The clinic ran smoothly throughout the day. A larger number of physicians could have been used. Fifteen to twenty chairs were necessary for people waiting for the nose and throat examination and in front of the gynecologic rooms. Otherwise, there were no delays. Most of the workers spent the entire day at their assignments.

The departing examinees were told to contact their family physician after one week for the reports. They were given small cards stating that no medical examination completely rules out the presence of cancer and that if they developed any of a series of seven specific complaints, they should immediately see their doctor.

To complete the day, an evening meeting on "Cancer" for physicians and laymen was held in the auditorium of the same school.

Summary

A one-day Cancer Detection Clinic was conducted by the Stearns-Benton County Medical Society at St. Cloud. Several organizations including the American Legion Auxiliary, registered nurses group, St. Cloud Health Council, Medical Auxiliary, Minnesota State Board of Health and the Minnesota Branch of the American Cancer Society were asked to help with specific responsibilities. There was an overwhelming demand for appointments. Fourteen physicians, twenty-two graduate nurses, twelve nurses aides and twenty-eight laywomen ran the Clinic smoothly.

Among the 213 female and seventy-nine male examinees, there was a remarkable frequency of previous surgical operations, totaling 392 procedures. One hundred and sixty-six were referred back to their family physicians for further diagnosis or treatment. Of these, fifty-five required biopsies, twenty-five had precancerous lesions and twenty-four had what might be malignancies, including eleven breast nodules.

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POSITIONS OF THE PATIENT—THEIR EFFECT ON SPINAL ANESTHESIA

(Continued from Page 383)

dangerously high level of anesthesia has been known to attend the use of these solutions.

Jones Technique.—The patient is placed in the prone position and light solution used to "soak the posterior roots."

Wilson Technique.—The sitting position is used, with light solutions. A segmental type of anesthesia may be produced. If a light solution is injected with the patient in a sitting position, the solution will float upward until a sufficiently high level of anesthesia is produced and the patient is restored to a level position. It is thus possible to produce a zonal, or segmental, anesthesia with an unanesthetized area both above and below the area anesthetized; a longer anesthesia can be produced or, what is very likely the same thing, smaller doses may be employed. Possibly less shock may occur. At least in the hands of the inexpert, this is generally regarded as being a rather dangerous procedure.

After operation abrupt changes in position are to be avoided. Suddenly raising the head may cause cerebral anemia. The vasomotor system, which ordinarily adjusts itself automatically to change in posture, does not fully recover its sensitive response for hours. Therefore, if the head has been tipped down, keep it down on the way back from the operating room and on getting into bed. If the patient has been horizontal, let him stay that way. Movements should be few and gentle. Remember, in moving the patient, that he is not anesthetized above the waist.

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History of Medicine In Minnesota

HISTORY OF MEDICINE IN LE SUEUR COUNTY

(Continued from March issue)

H. E. Conley, J. C. Kinkle, George Kelly, F. F. Clifford, G. W. Johnson, James Green, E. P. Whitford, a Dr. Kernan and a Dr. Jellison all opened offices in Le Sueur County. At the end of the decade came W. S. Woods, S. B. Coe and James McKeon. J. P. Williams practiced in Le Sueur from 1884 to 1886.

During these years diphtheria was prevalent in a fatal form. In the winter and spring of 1880, the vicinities of Cordova and Montgomery were afflicted, and, at Waterville, Dr. Case reported thirteen cases in one week. All through the following year there were cases reported at various places in the county. One family near New Prague lost five children, and many families lost at least one member. In November of 1882 the newspapers recorded an outbreak of fifteen cases, including five deaths, in the town of Le Sueur. Dr. Ayer, to whom the county commissioners gave full authority, suggested disinfecting the sick rooms in order to prevent further spread of the disease. In the fall of 1883 and in the fall of 1884 there were several fatal cases. After two years of freedom from the disease, Le Sueur County was struck again—the school at Kasota was closed in order to halt the spread of the disease.

The last two years of the decade also saw recurrences of diphtheria.

In 1880, cases of cholera morbus were distressingly frequent at Ottawa. The following fall there was an outcropping of typhoid fever in the lower part of the town of Le Sueur. In the spring of 1882, and again in 1883, a number of cases of scarlatina were tallied, and in 1889 there was an epidemic. May issues of newspapers reported 120 sufferers from this malady.

Cases of smallpox in Montgomery created a furor in the spring of 1882. Dr. E. J. Brown of Minneapolis gave a graphic report of the event to the State Sanitary Conference later that year, telling the conference that when he was summoned to take charge he found the pest house located about six miles from the town. When he entered, he saw that one room contained all the patients —four males and three females—ranging in age from twelve months to twenty-four years. The only attendant was their mother, exhausted and half-crazed with grief. The four older ones were in an advanced stage of the disease, and their black faces presented an almost unbroken suppurative tract. The stench and filth were terrible.

The children had been sick for nine days without a physician, medicines or proper food and with only such care as the mother could give. The throats of the older ones had become so affected by the disease that they could swallow no solid food; they had had nothing but flour gruel and alcohol.

The doctor reported that he had to get food by persuasion and threat, and he had a difficult time vaccinating people.

The local inhabitants were fearful of contracting the disease and would not furnish the physician with a horse because they did not think he should break quarantine. After a week he was allowed to take rooms in the hotel at Mont-

gomery. The baby died of neglect and starvation. A fourteen-year-old boy, who belonged to the infected family but who had not been exposed to the disease, was kept in an out-house and people were forbidden to harbor him.

One of the patients had been seen twice during the early stages of the disease by Dr. W. H. Wood; but after the diagnosis, the town would not allow the doctor to call on the man again. A telegram to Minneapolis brought no response. After the death of the patient, the county supervisors sent a man to disinfect the residence, which he did by burning clothes, furniture, kitchenware and other household equipment. Nine days later the other members of the family had become infected, and Dr. Brown was called.

Many of Dr. Brown's statements, as recounted here, were denied by Frank Becker of Montgomery,* who said that there had been no objection to vaccination, that a man was hired as a nurse for three dollars a day, that Dr. Brown had arrived two days after the family had been taken ill (instead of nine days later), and that provisions of all kinds had been furnished to him.

1890-1900

There were no serious epidemics in Le Sueur County during the nineties. In 1891, in Kasota, there were a few cases of diphtheria, and then, with the exception of a few scattered cases, the county was free from the disease until 1900, when it again appeared in the town of Le Sueur. In 1892 there were a few cases of scarlatina in Le Sueur; in 1900 there were a few in Le Sueur Center.

In 1890, Dr. George Schultz located in Elysian. In 1893, Dr. D. A. Kirk arrived in Le Sueur, where he remained for about fifteen years. In 1894, Dr. H. B. Aitkens, a recent graduate of the University of Minnesota, opened an office in Lexington. Several years later he moved to Le Sueur Center, where he was an active member of the profession. Dr. J. E. LeClerc, a member of local and state medical societies, began practicing in Le Sueur in 1896. Dr. J. F. McDonald was practicing in Kilkenny about this time. In 1890, Dr. Norman G. Parker located in Le Sueur. A number of other physicians came for very short periods.

The office of coroner was filled by Drs. Umphrey, Dolan, Aitkens and McDonald. In the town of Le Sueur, Dr. W. H. Fisher served as president of the Board of Health. F. A. Dodge and N. G. Parker were also members of the board. In Montgomery, James McKeon officiated; and in Elysian, George Schultz held the position.

In 1892, Dr. E. P. Case opened a sanitorium at Waterville. The building was situated on an elevation overlooking the lake. It was built of wood, three stories high, and had a basement 38 by 74 feet. The sanitorium featured such modern improvements as steam heat, hot and cold water, Turkish, electric and shower baths. A few years after its opening, the sanitorium was destroyed by fire; but since it was fully insured, the structure, according to historical records, was rebuilt.

Although privately built telephone lines, of short length, began to be used between house, office and drug store, it was not until some years later that telephone companies began to connect farm houses with central offices. Practically all calls for physicians came by messenger, and until 1910 or thereabouts, the doctor traveled horseback or by horse and buggy. In many localities like this one, pioneer days lasted a long time.

* *Le Sueur Sentinel*, December 28, 1882.

About 1903, the Nicollet-Le Sueur Medical Society was organized. Physicians from the western part of the county generally belonged; whereas, those living in the eastern part affiliated themselves with the Scott-Carver County Medical Society. Those from the southwest belonged to the Waseca County organization.

HISTORY OF MEDICINE IN NICOLLET COUNTY

The business of treating sick persons, in the stretch of country now known as Nicollet County, was in the hands of Indian medicine men until 1853, when Fort Ridgeley was established in the western part of the county. Consequently, the first physicians were members of the United States Army. Dr. Alexander B. Hasson, an assistant surgeon, came to the fort in 1853 and was stationed there for a few months. He was succeeded by Dr. Asa W. Daniels, a graduate of the Medical College of Ohio. After a short stay, Dr. Daniels was appointed surgeon to the Lower Sioux Agency, about twelve miles away in Redwood County. It was here, in 1853 or 1854, that an Indian with a bad gunshot wound in his arm was brought to him for treatment. The doctor judged that the arm should be amputated, so he administered chloroform and performed the operation in the presence of the man's friends. This was the first time, so far as anyone knows, that chloroform had been used in the district northwest of the Mississippi. It is said to have made a great impression on the Indians, who spread the news far and wide that there was a white doctor who could make the soul leave the body and then come back again. Months later an Indian medicine man came a distance of "many suns" to get some of this wonderful stuff; but although he offered his pony and all his other possessions, the doctor refused his request, and he returned home a much disappointed man.

The third surgeon at the fort was Roberts Barthelow, who later became a professor at Jefferson Medical School and the author of a popular text book.

The fourth physician stationed at the fort was Dr. Alfred Mueller. He was there from 1861 until 1867, when he went to New Ulm and became one of the outstanding practitioners of Brown County. Dr. Mueller was the only physician at the fort in 1862 during the memorable battle with the Indians. The fort was, at that time, filled with refugees from the surrounding country, and it is recounted that during the attack 300 women and children lay for hours flat on their faces in an outbuilding without food or water.

Dr. Mueller showed his ability and skill as a surgeon, continuing his work in the din of battle, while expecting to lose his scalp at any moment. In addition to caring for the battle casualties, Dr. Mueller officiated at the births of three children.

Mrs. Mueller, who evidently had some ability and training as a nurse, helped her husband in caring for the wounded. Charles S. Bryant, in his *History of the Minnesota Valley*, paid a glowing tribute to the doctor and his wife for the services they rendered at this time, and the Commonwealth of Minnesota erected a monument to Eliza Mueller on the site of the Indian siege.

The first physician in civil practice to locate in Nicollet County was Dr. Hiram Wesley Catlin. He came to St. Peter in 1855 and practiced there until 1861, when, as he was about to move to Ohio, he was suddenly taken ill and died. Dr. Catlin was a graduate of the Louisville Medical College and had served in the Mexican war and practiced in Indiana before coming to Minnesota. At the time of his death, his practice in St. Peter was taken over by Dr. Asa Daniels, who returned to Nicollet County to live, and who was to become one of the most

prominent physicians in the locality. He served on many local boards and later became one of the first members of the Minnesota State Board of Health. He held membership in various medical fraternities.

E. F. Clark and William F. Hunter also located in St. Peter in 1855, and, in the following year, came R. H. Ewing, a doctor named Horne and C. Robb. These men remained only for short periods of time. Ewing practiced medicine and also kept the Ewing House, but, even at that, he must have found business difficult in the pioneer settlement. In attempting to collect his bills, prior to leaving the county in 1859, he announced that "ginseng, oats or corn will be taken at their highest market value."† It is doubtful if Robb practiced medicine during his stay. One other physician, Dr. Philander P. Humphrey, located in the county in these early days. He came to St. Peter in 1857 and remained until he was appointed, at a salary of $1,000 a year, to fill Dr. Daniels' post as physician at the Lower Sioux Agency in Redwood County. He and his wife and two children were killed during the Indian outbreak of 1862.

Besides Dr. Daniels, about fourteen other physicians practiced in Nicollet County during the sixties. One of the first to come was Jared Waldo Daniels, a brother of Asa Daniels. Before his arrival in St. Peter in 1860, he had been a government physician at the Yellow Medicine Indian Agency. During the Civil War he rose to the rank of major, serving under General H. H. Sibley and General Alfred Sully. After the war he spent two years in Faribault, Rice County, and then returned to Nicollet, where he lived, off and on, for a stretch of fifteen years. During this time, he served at various Indian agencies. William B. McCullough and L. H. Bullious were also early-comers who practiced in St. Peter for short periods. C. W. Le Boutellier, a member of the Ninth Minnesota Regiment of Volunteer Infantry, was stationed in the town in 1862. These men were followed by M. Flossion, a Frenchman; J. La Dow, Calvin Pratt, Frank W. Page, Henry C. Lehnert, and Isaac Cosner. The two latter were the first homeopaths in the county. All of these men lived at St. Peter. C. Hoberg, the first physician at Traverse, practiced there from 1864 until his death ten years later. Samuel E. Shantz, the first superintendent of the State Hospital for the Insane, came in 1866 and held the position until his death from typhoid fever in August, 1868. This institution, the first of its kind in the state, was located at St. Peter by the state legislature of 1866.

The *St. Peter Tribune* for January 23, 1867, gives an idea of the size of the new institution, which had over forty patients—"as many as there is room for." Dr. Shantz' assistant was a young Canadian, Jacob E. Bowers, who had just received his diploma from the medical department of the University of Michigan. He came in the spring of 1868 and remained at the hospital until he was appointed, ten years later, superintendent of the hospital for the insane at Rochester. He served as acting superintendent at St. Peter during the five months interim between the death of Dr. Shantz and the arrival of his successor, Dr. Cyrus K. Bartlett. The latter, a graduate of the Harvard Medical School, had been in charge of an asylum in Massachusetts before coming to Minnesota. Under his administration, the old building was abandoned and the present site was occupied. New buildings were built as the number of occupants increased.

At this time there was no office of county physician. The post of coroner was filled by Isaac Cosner.

There seems to have been an unusually large amount of sickness in Nicollet County during the sixties. During the first two or three years of the decade

†*St. Peter Free Press*, September 14, 1859.

there were a few cases of measles, typhoid fever and scarlet fever. In 1863 there were several people who died on the same day that they became ill, and their deaths were attributed, according to the newspapers, to spotted fever. However, the major complaint of these years was diphtheria. There were many cases in Nicollet County and in neighboring localities. A report written by Dr. A. W. Daniels for the Minnesota State Board of Health stated, in part:

"The first epidemic of diphtheria appeared in our village during the fall of 1862, soon after the Indian outbreak. At that time the town was crowded with refugees from the surrounding country, and every house was filled to capacity. The sudden influx of so large a number of destitute, half-clad and suffering people soon produced a deplorable sanitary condition. Typhoid fever was first to make its appearance, soon followed by measles and diphtheria, the two latter becoming epidemic. I have no notes to enable me to supply an accurate number of cases and percentages of mortality and, therefore, must rely upon memory. Probably there were not less than seventy cases of diphtheria, of which some twenty were fatal. The deaths were mostly those of children under ten years of age.

"Throughout the epidemic the disease manifested a decided tendency to attack such as were suffering from measles, and a large proportion of the deaths was the result of this complication."

A newspaper item furnishes the information that between August 18, 1862, and January 23, 1863, there were 127 persons buried in the local cemetery, and that, of these, twenty were residents of the town, and sixty of the total were children. Sporadic cases occurred in the following years.

In 1862, there was, apparently, a military hospital in St. Peter and, at this time, C. W. Le Boutellier was the surgeon in charge. In the winter of 1863-64, St. Peter was the headquarters of the Sixth Regiment, under the command of Colonel Crooks. This added to the already crowded condition of the town. Living quarters were unsanitary and badly ventilated. Sewage was not properly disposed of, and the water supply, from shallow wells, soon became polluted. The result was a number of cases of measles, typhus, cerebrospinal meningitis, diphtheria and smallpox. Under these adverse conditions Dr. Alfred Wharton, surgeon of the Sixth Regiment, performed his duties, assisted by Dr. Potter. Nine deaths occurred from smallpox alone. Naturally these diseases were not confined to the soldiers, but involved the civilian population as well. In 1869, according to the *St. Peter Tribune*, there were seven cases of smallpox in the town of Bernadotte, three of which were fatal.

1870-1879

M. W. Scott practiced medicine in St. Peter for a short time in 1870, and C. A. McCohlon and J. R. Nelson were there for brief periods in 1871. Two other physicians came about this time, both of whom were to practice in the county for many years and to become well known in their profession. They were Daniel B. Collins and George F. Merritt. The former located in St. Peter shortly after receiving his diploma from Rush Medical College. With the exception of two years, he continued to live in St. Peter until his death in 1898. He was several times elected health officer and city physician, and he served as surgeon for the Second Regiment of the Minnesota National Guard. He belonged to many organizations, and when the local and state medical fraternities were organized, he joined. Dr. Merritt, also a graduate of Rush, practiced in St. Peter until his death in 1921. He was also a member of various fraternal orders and the local, state and national medical societies.

Dr. John Pehrsoon shared the office of Dr. A. W. Daniels for a year or so. He later became a lecturer at the College of Physicians and Surgeons in Min-

neapolis. Dr. J. H. James spent the years 1876 to 1891 in St. Peter, and besides his duties as assistant physician at the hospital for the insane, he often attended patients in the town and the surrounding country.

Marion Putnam, about whom very little is known, was in St. Peter in 1878. In the same year came Dr. V. Bolon, a German who specialized in eye and ear work, but who probably made more money as a *geburts-helfer.*

In all, there were at least nine regular physicians and one homeopath who were well established in the county by the end of the seventies. All were located in St. Peter.

The Minnesota State Medical association, reorganized in 1869, elected a number of Nicollet County physicians to membership during the seventies. Dr. A. W. Daniels was a charter member. Dr. C. K. Bartlett, elected in 1870, wrote the semi-annual essay in 1872 on the subject of insanity and its treatment. Dr. J. E. Bowers, also of the St. Peter asylum, was elected in 1870. Later members were John Pehrsoon, J. H. James and G. F. Merritt.

Dr. A. W. Daniels was a member of the Blue Earth Medical Society, which changed its name in 1872 to the Minnesota Southwestern Medical Society.

In 1870, typhoid fever was reported to be quite prevalent in the vicinity of St. Peter. In November, Dr. Daniels reported that he had twelve cases under his care. In the same year there were rumors of many cases of smallpox. The newspapers insisted, however, that aside from a few cases at the hospital, there had been only three cases of varioloid and one mild case of smallpox in the town. Several persons living four or five miles from town were reported infected in 1872, but apparently the disease did not spread outside of one family circle.

It was said in the spring of 1875 that "mumps were spread all over town" and that eight persons suffering from the disease were staying at the Nicollet House. In the spring of the following year several small children in St. Peter were reported dead of whooping cough. There were always a few cases of typhoid fever, and scarlet fever was prevalent in a mild form, during 1875 and 1876. A few cases of diphtheria appeared every year. In 1875, 1878 and 1879, they became more numerous and more often fatal.

Dr. A. W. Daniels, in his report to the State Board of Health in 1878, reported the epidemic as follows:

"The present epidemic of diphtheria commenced early in September and has not yet fully disappeared. It was noticed that the disease did not effect a lodgement in a particular part of town and spread from that infected district, but appeared in different localities about the same time, and the first victims were children whose tender years had necessarily confined them to their homes.

"The number of cases, as near as can be ascertained from careful inquiry among the physicians, has somewhat exceeded 100. Of these, fourteen fatal cases are reported. But few adults have been attacked, and none have died. Children have been the principal sufferers, and the fatal cases are generally under eight years of age.

"The catarrhal has been the prevailing variety. But this form of the disease has manifested a marked tendency to extend itself to the air passages and to assume the croupal variety. From this complication has come the great mortality of the disease. Every death during the present epidemic has been the result of croupous diphtheria—nineteen cases have occurred, with only five recoveries.

"A large proportion of the fatal cases received little or no treatment. Parents, supposing their children were 'only suffering from a cold,' neglected calling a physician until it was too late to prevent a fatal result."**

**Written in 1878. Published in the Minnesota State Board of Health *Reports* for 1879.

Courtland was the scene of the epidemic of 1879. The disease, apparently imported from Mankato, began in the spring. There were three fatal cases in the first family infected. It then spread over almost the entire township. It was noticeable that in the western part of Courtland, where the drainage was good and the living conditions more sanitary, that there were fewer fatal cases than in the eastern part where the drainage was very poor. During the year the total number of deaths from all causes was 188. Of these, twenty-one were caused by diphtheria.

During the seventies, Isaac Cosner often filled the office of county coroner, and A. W. Daniels and G. F. Merritt, the office of county physician.

1880-1889

E. C. Putnam, probably the first regular physician in the town of Nicollet, came in 1881 and remained there for about a year and a half. A. Keller also located there at about the same date. He remained an even shorter time. Joseph Wicke enjoyed a good practice in Nicollet from 1887 until his death in 1895. He also ran a drug store and served as president of the village council.

W. A. Jones, a native of Nicollet County, served as intern at the state hospital in 1881 and 1882. He later practiced in Minneapolis and was appointed as lecturer on nervous diseases at the University. He was for many years editor of the *Journal Lancet* and a member of the State Board of Health.

Another newcomer was George W. McIntyre, who practiced in St. Peter from 1883 until his death in 1920. During this period, he served for several years as assistant physician at the state hospital.

Arthur F. Kilbourne was also an assistant there from 1884 until 1889 when he was appointed superintendent of the hospital for the insane at Rochester. In 1889, C. M. Skinner located in St. Peter, where he built up a large practice. C. Kranz also practiced in Nicollet County during the eighties and nineties. He held an exemption certificate.

In 1881, when the Minnesota Valley Medical Society was organized in Le Sueur, several Nicollet County physicians were present. A. W. Daniels was elected second vice president, and G. F. Merritt, treasurer, an office which he held almost continuously until 1910. He was also treasurer of the Southern Minnesota Medical Society after the two organizations merged in 1913. Other Nicollet County members elected during these years were W. A. Jones, C. K. Bartlett, who served as president in 1882, D. B. Collins, G. W. McIntyre and J. H. James. The latter was also elected to membership in the Minnesota State Medical Society.

The effect of organizing may be seen in an agreement between Drs. Daniels, Collins and Merritt, who published a notice in 1884 to the effect that all calls made between the hours of 9 p.m. and 5 a.m. would be charged at double the usual rates.

Physicians may have complained of not being paid, but they could scarcely complain of not having enough work to keep them busy. During the eighties, diphtheria was prevalent in a fatal form almost every year. It was particularly bad in the early years of the decade and, in 1880, there were far more deaths than the county had ever known. It broke out in Courtland and Lafayette in May. The latter town had fifteen deaths from the disease within that one month.

At one period in June, Dr. Collins reported that he was attending twenty-seven cases in the town of Bernadotte. There were also many cases in New Sweden, Lake Prairie and St. Peter. It was not at all unusual for families to lose three or four children within a few weeks. Many families lost all their children. The

worst part of the epidemic seems to have been over by the end of June, although there were a number of fatal cases during the following months.

The total number of deaths from all causes in 1880 was 289. Of these, 115 (including the fifty-eight in the State Hospital for the Insane) were caused by diphtheria. In 1881 there were fifty-seven deaths from diphtheria. A few occurred in almost every month of the year, and they were distributed pretty well over the county, although Lafayette and Lake Prairie led with fourteen and thirteen cases, respectively. Most of them were children.

In 1882, the total number of fatal cases was eighteen. Statistics for the next four years are lacking, and it would seem that there were fewer cases and considerably fewer deaths. In 1887 there were twenty fatal cases. In 1889 there were also quite a few. Not merely Nicollet County but the whole state suffered during these years. It is appalling today to think that any epidemic could continue so long and extend over such a wide area.

Second on the list of contagious diseases was scarlet fever. It was most prevalent in the last two years of the decade, but, fortunately, it was mild in form. From June, 1887, to 1888, there were twenty-three cases, with four deaths, in St. Peter. From June, 1888, to June, 1889, there were thirty, including only one death. Other diseases, chiefly consumption, typhoid, measles and whooping cough, affected the population, but usually the epidemics were mild in form and there were few deaths.

In St. Peter a local board of health took measures to protect the citizens of the town. School children were vaccinated for smallpox, and in 1881 a set of rules was inaugurated which insisted on the reporting and quarantining of contagious and infectious diseases and prohibited public funerals for such cases. In 1885 a notice was published that all owners of property in the city should clean up their premises. A public dumping ground was designated. In 1889, steps were taken to improve the city water supply. Drs. McIntyre, Collins and Merritt served on the board of health.

There seems to have been no office of county physician during these years, since all the well-established physicians in the county, and some from outside the county, sent in bills to the county commissioners for medical services rendered. Sometimes the county poor were sent to hospitals in neighboring counties for medical care because Nicollet County had no such facilities.

Among the interesting operations performed by local men at this time were those for cataract done by Dr. J. H. James, who was one of the first eye specialists outside the Twin Cities.

(To be continued in the May issue.)

President's Letter

WE CAN'T STOP NOW

The American doctor never finishes his education. His M.D. degree is only the entrance requirement to the larger school of medical practice. At no point can he stop and reflect that a complete grasp of medical science is his; for the discoveries and developments in this field never stop. Often we doctors feel as frustrated as a man running up a downward-bound escalator when we visualize the literally endless vista of steps to be taken in the direction of increased knowledge and skill.

And there is never time enough.

Not time enough to read all the medical journals, observe all the techniques of our colleagues, enroll in all the refresher courses, study all the important case histories. No matter how many hours we slice from our already limited leisure time, there is never time enough to do the study and research we'd like.

That is why the annual meeting of the Minnesota State Medical Association is so valuable. Here, in a fact-packed three days, we can gain the results of hundreds of hours of analysis and condensation.

In essence, it is like the arrangement the late Joseph Pullitzer had for news coverage. He hired a staff of journalists to do nothing but read through the news, weigh and compare and sift out the trivia. The finished product was a concise, comprehensive survey of the day's events and took him only a few minutes to peruse.

As always, the annual meeting has a careful balance of lectures and clinico-pathological sessions. The subjects have been selected by the Committee on Scientific Assembly after long consideration and comparison of values.

I believe we approach this convention with a deeper appreciation than we have in former years. In view of the many critical thrusts at the economic and scientific principles of medical practice, we have an even greater responsibility to enhance our value as doctors and citizens.



President, Minnesota State Medical Association

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

GOVERNMENT MEDICAL CARE IN ACTION

BEFORE making any radical change in the provision of medical care such as the Wagner-Murray-Dingell Bill provides, or even advocating the change to government provision medical care, it would be well to understand how it works. European countries have had government medicine of various types for many years, and can be cited as illustrative of its functioning.

In England the panel system was inaugurated in 1912 and applied to a third of the population. During World War II, it expanded to include half the population. This was a limited medical service providing only for the services of the general practitioner in the office and at home. On July 5, 1948, all types of medical service were included and, although this new experiment has been in effect but a short time, government medicine itself is not new in England, and an evaluation of its operation today is possible.

Impressions of the status of medical practice in England today have been recorded by Dr. William H. Sweet* of Boston after a recent period of practice there which culminated a number of years' residence and an intermittent practice in England. The picture he paints of the present quality of medical practice and the lot of the medical profession under the socialistic regime is illuminating.

The panel system continues, and general practitioners are swamped by patients with petty complaints and an apparently increased number of neurotics. Certificates for sick leave, extra food and even hot water bottles occupy much of the practitioner's time. Those with a panel of 2,000 see, on the average, fifty patients a day; and those with a panel of 4,000, as high as 100 a day. One can imagine that ordinary history taking and physical examination of so many individuals is an impossibility. Although there is one doctor for every 875 inhabitants in England, the panels are larger than this number, as individuals are assigned to the general practitioners only. The easiest way to get off work is by means of a doctor's certificate, and if the doctor doesn't readily comply, the individual joins another panel. X-ray service, for the most part, is limited to the hospitals, and this type of service is swamped with the needs of hospital cases. As a result, the general practitioners, as a rule, cannot follow an interesting diagnostic case to any extent, but must refer the patient to the specialist in the hospital. House calls day or night being free, a practitioner can easily be worn out, if he is conscientious, by midnight calls, which he dare not refuse, in case he might overlook an emergency. Orthopedic appliances and eyeglasses, being free, are overprescribed. Further, it is attested, a manufacturer, if not in government favor, may easily be driven out of business.

The author tells of one outstanding specialist who anticipated great things from government medicine but has been greatly disappointed, inasmuch as his new institute, which should have been completed in four months, has not been completed after four years due to government red tape—the requirements for a permit for every item of material, transportation, type of labor, ad infinitum. The author tells of requesting a special kind of instrument from the University of Health. After eight months, the request was refused because the instrument was of an unusual type. Long before that he had purchased one from a private source.

Salary compensation for specialists (in England, known as consultants) has not yet been settled, but the average compensation is about $2,500 net after taxes; and this for one who has spent fifteen years in study and practice. The mechanic in England is better compensated!

The British Medical Association was not consulted when the medical profession was taken over by the labor government. The author believes that the profession made a mistake in not analyzing the defects of the proposed system and proposing in its stead a well-conceived plan of improvement, taking a stand against the ill-advised government changes. The profession in

*Sweet, William H.: Recent impressions of medical practice in Great Britain. *New England Journal of Medicine,* 240:168, (Feb. 3) 1949.

America might well profit from the experience of our British confrères.

The author makes a clear analysis of the disadvantages of any system of medical care which changes the incentive of the patient, making the physician, rather than the individual, responsible for his client's health. When convalescence is paid for by others it is bound to be protracted. Subjective symptoms are always difficult for the physician to evaluate, and the addition of certain factors inherent in government care of sickness makes differentiation of serious organic illness from functional or simulated complaints well nigh impossible. When it is advantageous for individuals to present themselves to a doctor with medical complaints, more will do so.

The author pointedly concludes:

"If the task of assessing the ability to lead an active life and the compensability of lack of enthusiasm therefore is to be extended to the entire population, the experience in Great Britain suggests that in this country extended ill feeling between the medical profession and other segments of the nation and a deterioration in the quality of medical care can be anticipated."

THE ARTHRITIS AND RHEUMATISM FOUNDATION

EFFECTIVE attack on crippling rheumatic diseases will require the raising of at least $6,100,000 for research alone over the next five years. This recommendation was made recently to The Arthritis and Rheumatism Foundation by a National Research Council Committee appointed to survey research needs in this field.

Rheumatic disease, the committee's report stated, "is the most common cause of chronic illness." It pointed out that "approximately 7,500,000 Americans have arthritis or some other form of rheumatic disease."

"The magnitude of this problem is great," the committee declared, "as manifest by the incidence of the diseases and by the many related social and economic problems. The rheumatic disease group, although one of the oldest known to medical history, is one of the most neglected fields of medicine."

The need for research, it was pointed out, is shown by the fact that, except for conditions directly traceable to infections, the causes of rheumatic disease are still unknown, and present treatments, though helpful, include no specific cure.

Seventeen distinguished physicians and scientists, under the chairmanship of Dr. Walter Bauer of Harvard Medical School, participated in the survey report. The five-year program they recommended calls for $4,300,000 for support of researches, and $1,800,000 in research fellowships to train able young investigators, and thus to overcome a deficiency in the number of competent research workers in the field of arthritis and other rheumatisms.

The other members of this committee are: Dr. Franz Alexander of University of Illinois; Dr. Granville A. Bennett of University of Illinois; Dr. William Bloom of University of Chicago; Dr. Robert Elman of Washington University; Dr. Richard H. Freyberg of Cornell University; Dr. Ralph W. Gerard of University of Chicago; Dr. Philip S. Hench of Mayo Foundation; Dr. C. N. H. Long of Yale University; Dr. Colin M. MacLeod of New York University; Dr. Karl Meyer of Columbia University; Dr. Charles Ragan of Columbia University; Dr. William D. Robinson of University of Michigan; Dr. Edward S. Rogers of University of California; Dr. Howard A. Rusk of New York University; Dr. Francis O. Schmitt of Massachusetts Institute of Technology; and Dr. T. C. Thompson of Columbia University.

All the rheumatic diseases have one thing in common, the report stated. The portions of the body which they attack—the bone, cartilage, muscle and connective tissue—all develop from what is called "embryonic mesenchymal tissue."

"It is essential," the report declared, "that information regarding this significant tissue be increased as rapidly as possible to afford basic data needed for elucidation of the over-all problem."

Two other broad fields of research which the committee said should be developed were the specific clinical and physiological problems of arthritis and other rheumatic diseases, and the social, environmental and other public health factors bearing on these diseases.

The committee indicated many specific research leads which should be investigated thoroughly. Rheumatoid arthritis, the worst of the cripplers, tends to wholly or partially disappear during pregnancy and during severe attacks of jaundice, thus indicating, according to members of the committee, that a specific cure for this disease can be found.

The fact that some forms of rheumatic disease, such as rheumatoid arthritis, more often attack women, while others such as rheumatoid spondylitis or "poker spine" chiefly attack men, was cited as the example of the need for research on the sex hormones and other ductless gland products in relation to rheumatic disease.

Other projects recommended to The Arthritis and Rheumatism Foundation included:

The relation of germ and virus infection to the onset of rheumatoid arthritis and of rheumatic fever, which by bringing on heart disease kills more children between the ages of five and nineteen than any other illness.

Studies of the blood and circulatory system aimed at checking osteo-arthritis, the rheumatism of old people, together with aging and other degenerative changes.

Hereditary factors in relation to all rheumatic diseases, including gout.

Emotional factors related to the development and persistence of arthritis.

In the attack on the rheumatic diseases, it was recommended that research be carried down to the basic molecules of tissues involved. For this, it was said "it is necessary to enlist the cooperative efforts of physicists, chemists, biologists and medical scientists." It was declared that new technique, such as the use of radio-active tracer substances and other new scientific techniques should be used.

"Much may be accomplished by electron microscopy," the report declared. "Application of biophysical techniques, x-ray diffraction, ultraviolet, polarization, phase-contrast, and dark-field microscopy also deserve encouragement, and may provide a clearer understanding of the normal as well as abnormal structure."

The Arthritis and Rheumatism Foundation, for which the report was prepared, has its offices at 535 Fifth Avenue, New York City. It was organized by Floyd B. Odlum, who is chairman of its board, and a group of lay and medical leaders throughout the nation. It is now trying to raise $2,000,000 for its first-year program.

Half of this money is to go to the Foundation for the purpose of financing a nation-wide research program and conducting a campaign of public education concerning what can be done about these crippling afflictions.

The other half will be retained locally to help provide better means of treatment. The Minnesota-Dakota Chapter of the Foundation is seeking to raise $50,000 of the needed $2,000,000.

Here is how the $50,000 to be raised will be spent:

For nation-wide research and education	$25,000
For a Minnesota-Dakota Rheumatism Diognostic Center at the Mayo Clinic	10,000
For a special course in rheumatism for Minnesota and Dakota practicing physicians, to be conducted at the University of Minnesota	8,000
For studies, plans and public education concerning what ought to be done about the rheumatism problem in Minnesota and the Dakotas	7,000
Minnesota-Dakota goal	$50,000

One of the most effective uses which can be made of funds retained by the local Chapters is the support of beds which will be used for the study of arthritis and other rheumatic diseases. Only government funds can hope to cope with the enormous cost of beds for chronic custodial care. Private funds, however, spent primarily on beds which are used to study arthritis and other rheumatic diseases, may open the way to the discovery of better means for prevention and cure. And, while this search goes on, they will help immediately to prevent chronic crippling deformity.

C. W. Fogarty, Jr., M.D.

BETTER MEDICAL DENTAL INTEGRATION

WE HAVE before us a report by the joint committee from the Rhode Island Medical Society and the Rhode Island State Dental Society on medical-dental relations. The function of the committee was to study the existing relations and make recommendations for improving them. This report has recently been widely disseminated in the hope that improvements in the various phases of inter-relationship between the two professions, from the standpoint of education, practice, research, not only in Rhode Island, but on a national scale, will result.

The medical schools may justly be accused of neglecting the dental field in their training of physicians. Possibly the dental schools have restricted the teaching of dentistry to too narrow a field. We *do* know that the average physician knows little about the science of dentistry and as a rule, is content to leave treatment problems to the dentist. Why should the physician consider as his field the entire patient—except his teeth? It is certainly to the advantage of the

patient if his dentist knows when symptoms appearing in the mouth indicate medical consultation.

The Council on Education and Hospitals of the AMA has advocated the inclusion of dental departments in hospitals throughout the country. The Council on Education of the American Dental Association has supported the measure by setting up standards for hospital dental internships and residencies. This is a practical and desirable step for the larger hospitals and would facilitate the establishment of medical-dental clinics for reciprocal exchange of professional knowledge.

In the field of research there is need for cooperation between the medical and dental professions. The problem of the prevention of dental caries must be one of disturbed metabolism which neither profession, so far, has solved. Hospital medical-dental clinics might afford material for research in this field. The value of fluorine in the prevention of dental caries can be determined only by widespread trial.

We believe the Rhode Island Medical and Dental Societies have made a valuable contribution in calling attention to the desirability of more dental instruction of medical students and more medical instruction of dental students; the establishment of medical-dental clinics in hospitals, and more exchange of knowledge by the two professions through the medium of societies and publications.

"LABORATORY ABUSE"

IN THE editorial column of MINNESOTA MEDICINE (July, 1947) under the caption "Laboratory Abuse," was published a discussion against excessive laboratory procedure. It may be of interest to call attention to what our British Colleagues have said recently on the same subject.

Under the title "Where are We Going?" in the *British Medical Journal* of March 13, 1948, Franggon Roberts, Honorary Physician in charge of Douty X-Ray Clinic, Addenbrooks Hospital, Cambridge, discusses in the most striking and philosophical manner the mounting costs for x-ray examinations which is due to a terrific increase in requests. Since 1945, cost of hospital care, cost of out-patient attendants, and the number of pathological examinations have risen enormously. The ground he covers in trying to arrive at the logic of all this is a commentary on what is going on in the practice of medicine today. Every physician interested in the trends in practice should read this paper.

In Edinburgh, Edward B. Hendry, B.Sc., Ph.D., M.D., Ch.B., in a paper entitled "Medicine as a Planned Economy" (The Biochemist's View) in the *British Medical Journal*, (Sept. 1948) was inspired no doubt by Roberts' paper. He discusses the experiences in the biochemical laboratory of the Royal Infirmary. The rise of requests for laboratory examinations has risen very rapidly since 1945. He quotes Roberts' apt remark on this rise which he calls an "acceleration toward infinity." Dr. Hendry's discussion of the portent of this acceleration is interesting reading. To quote his conclusions:

> "Everyone must agree that the alarming increase in the number of laboratory examinations must stop or be stopped before things reach the stage of becoming a farce. It would give rise to a good deal of acrimonious debate whether the process should be stopped by the clinician, by the laboratory staff, or by the hospital authorities, and whether it should be stopped by innuendo, persuasion, coercion, or compulsion. I do not propose to allow myself to become entangled in this delicate point.
>
> It is a great pity that there is not more collaboration between clinical and laboratory staffs. Active co-operation could do much to root out obsolete and unnecessary work and in other cases investigations, which are of importance, could be substituted with advantage to all."

With the present agitation in this country regarding socialized medicine, the extreme interest of the lay press in the discussion, the intense scrutiny which the lay press and the medical press are giving the English experiment, makes these two papers exceedingly interesting communications—to which every honest physician should run to read.

A large share of the success in controlling the disease (tuberculosis over the years should probably be credited to the intensive educational campaign through which the average person has been taught the importance of early diagnosis and treatment, the recognition of the characteristic symptoms, and the measures to be taken to prevent the spread of the disease. The large number of tuberculosis clinics and sanatoria have also played an important role in saving the lives of tuberculous patients. —LOUIS I. DUBLIN, PH.D., *Health Progress* 1936 to 1945, Metropolitan Life Insurance Co.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

NEWSPAPERS ALERT TO MEDICAL MUDDLERS

Minnesota journalists are keenly aware of the dangers inherent in the various plans for putting medical practice under government control. Excerpts from selected editorials show the trend of thought in the Upper Midwest, a trend that is encouraging to physicians, who sometimes feel that they are alone in the fight against socialism.

The *St. James Plaindealer* cites some of the fallacies in the compulsory health scheme by saying:

"To give such service free would obviously take a much larger physical plant than this nation possesses, and we possess the best that the world has produced. One thing that would surely happen in a program such as is suggested: Try as we would and be as conscientious that man can be, there would be a steady deterioration in the quality of the services rendered, the appearance of assembly line techniques and a gradual disappearance of traditional doctor-patient relationships."

Job Seekers Want It

"Congressional investigation has proved that chief propagandists for socialized medicine are those who conceive of themselves as holding important positions in a future medical bureaucracy," asserts the *Rushmore Enterprise*. "Their testimony is manifestly not that of neutral observers. The crocodile tears they shed with respect to the medical treatment received by the common citizen serves to disguise from the latter that under private medicine he is the best cared for patient in the world. Essentially, the politician is insisting upon the right to act as broker between doctor and patient on the theory, apparently, that the latter is incompetent to safeguard his own interests."

How private medicine and government medicine differ is illustrated in this striking manner by the *Vesta Vision:*

"No doubt you heard the warning over the radio, or read it in the daily paper, against the use of certain drugs as a substitute for salt. There have been three or four deaths from the use of the salt substitute, and the American Medical Association issued the warning. BUT the drug had been APPROVED by the Pure Food and Drug Administration. The Pure Food and Drug Administration is the Government agency; the American Medical Association represents individualism in medicine, the opposite of State Medicine."

Doctors Not Arbitrary

The *West Concord Enterprise* sets the record straight on the position of doctors in the socialized medicine vs. private medicine conflict:

"If anyone has an idea that the physicians of this country are fighting any and all plans that would give the American people better medical attention at a cost which is within their means, he is sadly misinformed. It is true that the great majority of doctors are strongly opposed to compulsory government health insurance, and kindred schemes which would open the gates wide to completely socialized medicine. The basic reason for this opposition is found in a statement issued by the American Medical Association, which said: 'The experience of all countries where government has seized control of medical care has been progressive deterioration of the standards of that care to the serious detriment of the sick and needy.'"

Taking the long view, the *Austin Daily Herald* cites the approach of complete socialism.

"The compulsory health insurance plan is simply one of the planks in a platform that would create a total state. Lenin himself ranked socialization of medicine high among Communist objectives. And socialized medicine will come as surely as night follows day if we give the bureaucrats control over medical practice."

Warns of Wrong Route

The *Little Falls Daily Transcript* warns against the loss of present high quality medical care.

"With the exception of compulsory insurance plans, the developments in the field of medicine are taking place through the efforts of medical personnel and a forward-looking public. As plans for socialization of American medicine are advanced, we must look to the high calibre of present medical service and ask ourselves if we want to take chances with governmental control of this service in the future. Adequate medical atten-

tion for all is a goal toward which we must aim. But let us not take the wrong route."

American people are not helpless against the burden of sickness costs, declares the *Hibbing Daily Tribune*, despite:

"One of the basic implications in arguments on behalf of compulsory health insurance is that the bulk of the American people are almost totally incapable of dealing with illness when it strikes."

"That implication is not supported by the facts," asserts the *Tribune*, quoting enrollment figures from the voluntary prepayment plans. ". . . their (voluntary plans) growth is both steady and rapid, the cost is low, the extent of coverage has been substantially broadened, and they clearly provide the soundest approach yet devised to the problem of paying for medical attention."

Two Kinds of Patients

"Some authorities believe that the weakest link in the chain of medical care and national health is composed of two kinds of individuals," states the *Mankato Free Press*. "One kind is the fellow who is sure he is as healthy as a horse and has the constitution of one, and so he never sees a doctor from one year to the next. The other is the fellow who knows something is wrong, but does not go to a doctor because he scorns doctors or is afraid of them or afraid of what they might tell him. No program yet proposed seems to offer much hope of solving that problem."

The shooting-butterflies-with-a-shotgun method is scorned by the *Harmony News* which believes:

"There is a small percentage of the population which is actually indigent, and which cannot deal with the problems of illness without outside aid. But certainly, this group can be cared for without taxing the American people billions a year for a compulsory scheme for all—and without setting the stage for completely socialized medicine. It has been factually supported time and time again by the records made in various countries where regimented or socialized medicine has been tried, that *science does not flower in a political climate.*"

The *Fergus Falls Daily Journal* quotes doctors claim that:

". . . the system will result in complete demoralization in medicine in the course of time."

REGIONAL MEETING TO AID LOCAL HEALTH UNIT PLAN

Promoting the plan for full time health departments throughout the nation are regional meetings. Two have already taken place and one is scheduled for April 25, 26 and 27, in Omaha.

Five midwestern states met in Mitchell, Indiana, and five Rocky Mountain states at Salt Lake City. The Omaha session will include teams of ten from Minnesota, Iowa, Nebraska and North and South Dakota.

Sponsor of the meetings—the National Advisory Committee on Local Health Units—suggests that best results are obtained when the teams include representatives from the official health agency; the medical, nursing, dental and pharmaceutical professions; the civic organizations, such as the Parent-Teachers Association, the Federation of Women's Clubs, the Business and Professional Women's Clubs, the Lions, Kiwanis, Rotary; farm organizations such as the Grange, Farm Bureau, Farmers Union Cooperative; labor and industry—AF of L, CIO, Chamber of Commerce; the voluntary health agencies—tuberculosis and health associations, Cancer Society, American Red Cross, Infantile Paralysis Foundation and any other representative organizations.

The idea is to develop a nucleus within the state for promoting a public health program.

WHAT'S HAPPENING IN HEALTH EDUCATION?

St. Louis County has divided its health education program into five categories, beginning with an educational program for the Medical Society and Auxiliary. The speakers' bureau, organized under the direction of Dr. W. A. Coventry, has arranged for medical talks at all service clubs and almost all civic groups. Liaison with various organizations, many of them medically allied, is the third division of the program and, by this means, assistance has been given in obtaining and preparing direct-mail material. The doctors are also assisting lay persons in framing letters to their congressmen, protesting against the compulsory health insurance proposal. Newspaper and radio co-operation is being sought, with marked success, by the fifth division of the society. Local news commentators are using medical news and the newspapers have responded with what St. Louis county spokesmen describe as "excellent publicity."

Ramsey County Auxiliary is filling its niche in the state-wide Community Health Day schedule, April 21. The Ramsey County session, emphasizing women's health, health and behavior

problems of children, the community's role in improving health conditions, will be held in the theatre section of the Saint Paul Auditorium.

Stearns-Benton Medical Society has conducted a three-week series of medical broadcasts over Radio Station KFAM, St. Cloud. The Monday-Wednesday-Friday programs centered around such subjects as hospital costs and facilities and the doctors' connection with hospitals, the DP physician, local care for indigents, Blue Cross and Blue Shield and the Ewing, Brookings and Friedman reports. The concluding show was entitled "Would You Like To Become a Doctor?" Newspaper advertisements and radio spot announcements promoted the series which Medical Society members felt was highly successful.

TABLOID TO BRING HEALTH NEWS TO MINNESOTANS

Minnesota health standards rank high in a nation that holds the best health records in the world. Facts about Minnesota's health, the state's growing importance as a world medical center, advances made in the conquest of heart disease, cancer, and other diseases which rob the state of far too many citizens, information about the voluntary pre-payment systems for financing medical and hospital care are included. By statement and implication the fact is made clear that only where medical practice and research is free of governmental control could this progress against disease have been made.

The tabloid, an eight-page publication, will be distributed to 200,000 selected rural and industrial families in the state. Subsequent issues are planned for the year. Physicians will receive their copies with their regular monthly *Newsletter.*

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota

Julian F. DuBois, M.D., Secretary

Minneapolis Abortionist Ordered to Serve Four-year Prison Term

Re. State of Minnesota vs. Martin Peter Schmit, et al.

On March 17, 1949, Martin Peter Schmit, forty-nine years of age, 127 East 14th Street, Minneapolis, was sentenced by the Hon. William A. Anderson, Judge of the District Court of Hennepin County, to a term, not to exceed four years, at hard labor in the State Prison at Stillwater. The defendant had entered a plea of guilty on February 14, 1949, in Judge Anderson's Court, to information charging the defendant with the crime of abortion. Judge Anderson refused to place the defendant on probation and ordered him to serve the sentence.

Schmit was arrested on February 9, 1949, following an investigation made by the Minnesota State Board of Medical Examiners and the Minneapolis Police Department, into the circumstances surrounding a criminal abortion performed by the defendant on or about January 25, 1949, on a twenty-year-old, unmarried, Minneapolis girl. The patient became seriously ill and was hospitalized in a Minneapolis hospital. The patient stated that the abortion was performed by the defendant by means of a catheter and that the defendant was paid $200 for his services. Subsequent investigation disclosed that the defendant had performed numerous other abortions during the past year. The defendant at the time of being sentenced admitted that he had performed twenty-five abortions. He further stated that he charged from $50.00 to $200.00 for each abortion.

Schmit stated that he was born January 5, 1900, at Chamberlain, South Dakota; that he received his grade school education in Yellow Medicine County, Minnesota; that he subsequently worked as a mechanic, welder and salesman in Minnesota. Schmit admitted that he had no training in medicine or surgery and that he had no license to practice any form of healing in the state of Minnesota or anywhere else.

* * *

Minneapolis Tailor Sentenced on Abortion Charge

Re. State of Minnesota vs. Raymond P. Alberts.

On April 5, 1949, Raymond P. Alberts, forty-four years of age, residing at the Minnesotan Hotel, Minneapolis, was sentenced by the Hon. John A. Weeks, Judge of the District Court of Hennepin County, following the defendant's entering a plea of guilty on March 11, 1949, to an information charging him with the crime of abortion. The sentence imposed by the Court was "according to law." Judge Weeks suspended the sentence and placed the defendant on probation for five years. The defendant was arrested on March 5, 1949, following an investigation into an abortion performed on a twenty-four-year-old unmarried Minneapolis woman. The investigation disclosed that the abortion had been performed by the defendant by means of a catheter. There was no evidence that any consideration was paid for the abortion.

The defendant, at the time of his arrest, was employed as a tailor in a Minneapolis department store. Upon being questioned by the Court, Alberts stated that he was born at Fond du Lac, Wisconsin. The defendant admitted that he had three prior convictions for felonies, the first one in 1919, in the Circuit Court at Fond du Lac, Wisconsin, on a charge of rape. For that offense the defendant was sentenced to a ten-year term in the Wisconsin State Prison. After serving two and one-half years, the defendant was transferred to the Wisconsin State Reformatory at Green Bay. Upon being released, the defendant was convicted in November, 1926, in the Circuit Court of Milwaukee of the offense of grand larceny, and also of armed robbery. The defendant received a combined sentence of three to fifteen years for those two offenses. The defendant served until May 7, 1932, at which time he was released on parole. The Court stated to the defendant that he was giving him another opportunity to make good in view of the fact that there was no evidence that the defendant had violated any laws since his conviction in Milwaukee in 1926 up to the present case. Alberts admitted that he never studied medicine nor any of the other healing arts.

MINNESOTA STATE MEDICAL ASSOCIATION

Ninety-Sixth Annual Meeting

Saint Paul Auditorium, Saint Paul, Minnesota
May 9, 10 and 11, 1949

ANNOUNCEMENTS

Presiding officers at each session have been instructed by the Committee on Scientific Assembly to show a blue light on the speakers' rostrum two minutes before the end of each speakers' program time. A red light will show when his time is up.

REGISTER AND SECURE YOUR BADGE at the Registration Desk at the Saint Paul Auditorium at 8:00 A.M. Admittance will be by badge only. Arrangements have been made with the hospitals to admit interns and key hospital personnel as guests *if previously certified.* Out-of-state physicians can secure guest badges by presenting their membership cards from their local county and state medical societies.

TELEPHONE SERVICE: All physicians attending the Annual Meeting are reminded to tell their home and office secretary how they can be reached during their attendance in Saint Paul. Special incoming lines have been installed at the Auditorium Registration desk. All local and long distance calls will be handled promptly by directing calls to the Minnesota State Medical Association at the Saint Paul Auditorium—*Cedar 1374.*

BRING YOUR MEMBERSHIP CARD: There will be no registration fee for those who present a membership card or receipt or other evidence from their county society or the state association or the American Medical Association, nor for members of associated professions including dentists, pharmacists, interns, nurses, hospital personnel, teachers or social welfare workers who present invitations or other identification.

BADGES: You are requested to wear your badge while you are on the convention floor. This is important and will greatly assist us to eliminate undesirable persons such as cranks and pickpockets who so frequently try to take advantage of meetings of this character.

PARKING: Good parking space is available next to the Auditorium.

VISIT THE EXHIBITS: In keeping with established custom, forty-five minute recess periods have been provided each day, during which time those attending the Annual Meeting are urged to visit the scientific and technical exhibits. There is something of interest and education in the large exhibit of technical displays. Stop and show your appreciation of the exhibitors' support in helping to make successful the 1949 MSMA Convention.

SCIENTIFIC CINEMA: A full day's program of interesting medical motion pictures has been provided by the *Medical Film Guild* and will be shown in the *West Arena.* Detailed information on the films and the projection schedule will be found on page 10.

ROUND TABLE LUNCHEONS: A series of twenty-one Round Table Discussion Luncheons have been arranged for this meeting. One luncheon is scheduled for Monday; ten will be held on Tuesday, and ten on Wednesday. Tickets may be purchased in advance for these luncheons, all of which are held at 12:15 p.m. at either the Hotel Saint Paul or Hotel Lowry. Lists of subjects and leaders are printed in the program on pages 17 and 19 and on the reservation cards mailed with the program. Attendance at each luncheon is limited; latecomers are accommodated according to their choice if limits have not already been reached. Tickets $2.00, tips included.

MEDAL: The Southern Minnesota Medical Association will again award a medal to the individual physician presenting the outstanding scientific exhibit. The award will be made at the banquet Tuesday evening, May 10, at Hotel Saint Paul.

FIFTY CLUB: Tribute will be paid to those members who this year have completed fifty years of practice in Minnesota by election to Minnesota's "Fifty Club." Candidates will be honor guests at the Ninety-sixth Annual Banquet, 7:00 p.m. Tuesday, May 10, Hotel Saint Paul, and will be presented with lapel buttons and certificates at that time.

WOMAN'S AUXILIARY: Physicians' wives attending the meeting may secure programs for the business and social sessions of the Woman's Auxiliary at the Women's Registration Desk in the lobby of Hotel Saint Paul. All visiting women are cordially invited to attend the special events arranged by the hostesses of the Ramsey County Medical Auxiliary. Among these is a tea Monday afternoon at the Women's City Club of Saint Paul, and the Annual Meeting and Luncheon at 10:00 a.m. and 1:00 p.m., respectively, at the Minnesota Club.

SPECIAL SESSIONS

In addition to the general sessions to be held on Monday, Tuesday and Wednesday in the Auditorium Theater on the ground floor to the right of the exhibition hall, there will be *five* special section meetings in Stem Hall (to the right of the exhibition hall). These will be held during the morning of each of the three con-

vention days and Monday and Tuesday afternoons. Intermission periods will be observed from 10:15 a.m. to 11:00 a.m. and again from 3:15 p.m. to 4:00 p.m. at each session so that those who attend may visit exhibits, demonstrations and the scientific cinema.

Monday, May 9

A Symposium on Orthopedic and Fracture Surgery has been arranged for *9:00 a.m.* Monday in *Stem Hall.* The program is open to all convention visitors.

The Minnesota Chapter of the American College of Chest Physicians will hold a special session on chest diseases Monday afternoon beginning at *2:00* in *Stem Hall.*

Tuesday, May 10

A Special Symposium on Research Problems will be held on Tuesday morning at *9:00* in *Stem Hall.*

Two illustrated lectures will feature the special session in Stem Hall starting at 2:00 Tuesday afternoon.

Wednesday, May 11

The Minnesota Academy of Ophthalmology and Otolaryngology is sponsoring a special program at *9:00* in *Stem Hall.*

DEMONSTRATIONS

Obstetric Manikin Demonstrations: A discussion of delivery problems and technics, with the use of the manikin, provided through the courtesy of the Minnesota Department of Health will be incorporated as a part of special luncheons held on each of the three days of the Annual Meeting; and at 5:15 p.m. in *Stem Hall* at the Auditorium on Monday and Tuesday.

Demonstration on Oxygenation During Anesthesia will be presented by the Section on Anesthesiology, Mayo Clinic, before each morning and afternoon general and special session and during intermission periods in the Scientific Exhibit Section S-8.

Demonstration on the Therapy of Irradiated Plasma and Plasma Substitutes will be sponsored by the Committee on First Aid and Red Cross during intermission periods and before each morning and afternoon scientific session in S-9 in the Scientific Exhibit Section.

Demonstration on the Physics of Atomic Energy will be presented by the Council on Physical Medicine of the American Medical Association, before each morning and afternoon scientific session in S-13 in the Scientific Exhibit section, and during intermissions. By means of demonstrative apparatus and charts, the Geiger-Muller Counter will be explained. Demonstrations will show the use of instruments in medicine and allied sciences.

SCIENTIFIC CINEMA

(Courtesy of Joseph P. Hackel, Medical Film Guild, Ltd., New York City)

Monday, May 9
West Arena, Auditorium

A.M.
9:00 CHRONIC PURULENT OTITIS MEDIA
N.Y. Polyclinic Medical School and Hospital

9:53 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School

10:45 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital

11:45 NON-OPERATIVE TREATMENT OF PARANASAL SINUSITIS
N.P. Polyclinic Medical School and Hospital

Intermission

P.M.
2:00 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School

2:55 A MULTIPLE PERSONALITY (PSYCHIATRIC STUDY)
Columbia University

3:20 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital

4:13 OCCUPATIONAL HEALTH PROBLEMS
Assn. Industrial Physicians & Surgeons

5:05 *Requests*

Tuesday, May 10

A.M.
9:00 OCCUPATIONAL HEALTH PROBLEMS
Assn. Industrial Physicians & Surgeons

9:47 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital

10:34 A MULTIPLE PERSONALITY (PSYCHIATRIC STUDY)
Columbia University

10:59 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School

Intermission

P.M.
2:00 NON-OPERATIVE TREATMENT OF PARANASAL SINUSITIS
N.Y. Polyclinic Medical School & Hospital

2:20 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital

3:13 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School

4:08 CHRONIC PURULENT OTITIS MEDIA
N.Y. Polyclinic Medical School & Hospital

5:00 *Requests*

Wednesday, May 11

A.M.
9:00 CHRONIC PURULENT OTITIS MEDIA
N.Y. Polyclinic Medical School and Hospital

9:53 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School

10:48 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital

11:45 NON-OPERATIVE TREATMENT OF PARANASAL SINUSITIS
N.Y. Polyclinic Medical School and Hospital

Intermission

P.M.

2:00 CERVICITIS — DIAGNOSIS — ETIOLOGY — TREATMENT
Loyola University Medical School

2:55 A MULTIPLE PERSONALITY (PSYCHIATRIC STUDY)
Columbia University

3:20 HYPOTHYROIDISM — ETIOLOGY — DIAGNOSIS — TREATMENT
Massachusetts General Hospital

4:13 OCCUPATIONAL HEALTH PROBLEMS
Assn. Industrial Physicians & Surgeons

5:05 *Requests*

GUEST SPEAKERS

We are indebted to the following societies and organizations for guest speakers at this meeting:

The Minnesota Academy of Ophthalmology and Otolaryngology—Speaker, RALPH O. RYCHENER, Associate Professor of Ophthalmology, College of Medicine University of Tennessee, Memphis.

The Minnesota Department of Health—Obstetric Manikin Demonstrators, HOWARD J. HOLLOWAY, Associate in Department of Obstetrics & Gynecology, Northwestern University Medical School, Evanston; and JOHN H. RANDALL, Professor of Obstetrics and Gynecology, College of Medicine State University of Iowa, Iowa City.

The Minnesota Radiological Society—Speaker, H. DABNEY KERR, Professor and Head of the Department of Radiology, College of Medicine State University of Iowa, Iowa City, who will deliver the annual *Russell D. Carman Memorial Lecture in Radiology.*

The Minnesota Society of Clinical Pathologists—Speaker, LEONARD W. LARSON, Bismarck, who will deliver the annual *Arthur H. Sanford Lectureship in Pathology.*

The National Foundation for Infantile Paralysis, Inc.—Speaker, ROBERT B. LAWSON, Department of Pediatrics, The Bowman Gray School of Medicine, Wake Forest College, Winston Salem, North Carolina.

The Northern Minnesota Medical Association—Speaker, CARL P. HUBER, Professor of Obstetrics and Gynecology, Indiana University School of Medicine, Indianapolis.

Other visiting speakers at this meeting:

RALPH E. CAMPBELL, Professor of Obstetrics and Gynecology, University of Wisconsin Medical School, Madison.

RONALD R. GREENE, Assistant Professor of Obstetrics and Gynecology, Northwestern University Medical School, Chicago.

LOUIS J. LIMARZI, Hematologist, University of Illinois College of Medicine, Chicago.

GUSTAF E. LINDSKOG, Professor of Surgery, Yale University School of Medicine, New Haven, Connecticut.

WALTER L. PALMER, Professor of Medicine, University of Chicago School of Medicine, Chicago.

ROY GLEN SPURLING, Senior Consultant in Neurosurgery to the Veterans Administration, Louisville, Kentucky.

SOCIAL EVENTS

Annual Banquet: The annual dinner for members, their wives and guests will be held at 7:00 p.m. Tuesday, May 10, in the *Continental Room* of *Hotel Saint Paul.* Ernest M. Hammes, St. Paul President of the Minnesota State Medical Association, and Colonel Jack Major, Paducah, Kentucky, will be banquet speakers. Tickets $4.00.

President's Reception: Dr. and Mrs. Ernest M. Hammes cordially invite all members of the Minnesota State Medical Association, their wives and convention guests to a Reception at the Minnesota Club from five to six-thirty o'clock immediately preceding the Banquet. Cocktails.

"Variety Night": All convention visitors and their wives will be guests of the Ramsey County Medical Society and the Minnesota State Medical Association for an evening of light comedy, music and dancing, Monday evening at 8:30 p.m. in the *Continental Room* of *Hotel Saint Paul.*

Medical Veterans of World War II will meet at a luncheon at 12:30 p.m. on Monday, May 9, in the Continental Room at Hotel Saint Paul. This is a good opportunity to meet the fellows again; let's make it One Hundred Per Cent (To quote Dr. A. N. Bessessen, Jr., President). Tickets may be secured at the registration desks. Make reservations in advance with Dr. A. N. Bessessen, Jr., 550 Medical Arts Bldg., Minneapolis 2.

Medical Women's Luncheon: Dr. Della Drips, Rochester, President, announces a luncheon meeting of the Medical Women's Association on Monday, May 9. Open to all visiting women doctors. Dr. Selma Mueller of Duluth is expected to talk on her medical service in the Orient. Make reservations in advance with Dr. Nellie N. Barsness, 540 Lowry Medical Arts Bldg., St. Paul 2.

Minneapolis General Hospital Surgical Residents Society will hold their annual dinner for members and wives at 7:00 p.m. on Sunday, May 8, at the University Club, 420 Summit Avenue, St. Paul. For reservations contact Ed Benjamin, 1727 Medical Arts Bldg., Minneapolis 2.

Minnesota Chapter, American College of Chest Physicians Luncheon: At noon, Monday, May 9, the Minnesota Chapter of the American College of Chest Physicians will hold a luncheon meeting in Room 334 of Hotel St. Paul at 12:15 p.m. Reservations should be made in advance with Dr. S. S. Cohen, Oak Terrace.

Minnesota Radiological Society will hold their annual dinner for members and wives at 6:00 p.m. on Monday, May 9, at the St. Paul Athletic Club, 340 Cedar Avenue. Guest speaker will be Dr. H. Debney Kerr of Iowa City, who will discuss "The Place of Radiation

Therapy in Intracranial Neoplasms." Reservations should be made in advance with Dr. Paul Medelman, 572 Lowry Medical Arts Bldg., St. Paul 2.

Minnesota Society of Clinical Pathologists will hold their annual dinner meeting for members and their wives on Wednesday evening, May 11. For reservations contact Dr. Kano Ikeda, Miller Hospital, 125 College Ave., W., St. Paul 2.

Nu Sigma Nu Reunion: The annual get-together of members of the Nu Sigma Nu Medical Fraternity will be held at the Minnesota Club, 317 Washington Street, St. Paul, on Monday, May 9. Cocktails from 5:00 to 7:00 p.m. For dinner reservations, kindly make reservations well in advance with Dr. Charles N. Hensel, 613 Lowry Medical Arts Bldg., St. Paul 2.

Phi Beta Pi Medical Fraternity Luncheon: All members of Phi Beta Pi Medical Fraternity are invited to attend a luncheon meeting at 12:15 p.m., Tuesday, May 10. Plans will be announced later and tickets will be on sale at the Registration Desk at the Auditorium. Arrangements in charge of Dr. B. G. Lannin, 1464 Lowry Medical Arts Bldg., St. Paul 2, and Dr. F. F. Wipperman, 1921 Medical Arts Bldg., Minneapolis 2.

SPORT EVENTS

Golf Tournament: The Annual Golf Tournament of the Minnesota State Medical Association will be held Sunday, May 8, at the *Town and Country Club, 2279 Marshall Avenue, St. Paul,* with tee-off at 11:00 a.m. All medical golfers are invited to enter and compete for the attractive prizes that have been donated. Victor P. Hauser, St. Paul, is tournament chairman.

Sport Event I: "Fifty-Bird Event Skeet Shoot" for Malcolm Pfunder Trophy, donated by Dr. Malcolm Pfunder of Minneapolis will be held from 10:00 a.m. to 4:00 p.m. on Sunday, May 8, at Minnesota State Fair Skeet Club—State Fair Grounds, St. Paul.

Sport Event II: Duck Hunters' Special "Razzle-Dazzle 25-Bird Event" for Leech Lake Trophy, donated by Dr. Vernon D. E. Smith.

BUSINESS SESSIONS

Hotel Lowry and Hotel Saint Paul

Saturday, May 7

2:00 P.M.—Council .....Room 234, Hotel Saint Paul
6:00 P.M.—Council .....Room 334, Hotel Saint Paul

Sunday, May 8

9:00 A.M.—Council .....Room 234, Hotel Saint Paul
9:30 A.M.—Reference Committees
.....Hotel Lowry
2:00 P.M.—House of Delegates .....
The Terrace, Hotel Lowry
6:00 P.M.—Council .....Room 334, Hotel Saint Paul
8:00 P.M.—House of Delegates .....
The Terrace, Hotel Lowry

Monday, May 9

8:00 A.M.—Council .....Room 234, Hotel Saint Paul
12:15 P.M.—House of Delegates .....
The Terrace, Hotel Lowry

Tuesday, May 10

8:00 A.M.—Council .....Room 234, Hotel Saint Paul

Wednesday, May 11

8:00 A.M.—Council .....Room 234, Hotel Saint Paul
9:00 A.M.—Installation of Officers .....
Auditorium Theater

COMMITTEE BREAKFAST MEETINGS

Hotel Lowry and Hotel Saint Paul

Monday, May 9

7:30 A.M.—Committee on First Aid and Red Cross ..
Sibley Room, Hotel Saint Paul
Committee on Tuberculosis .....
Room 334, Hotel Saint Paul

Tuesday, May 10

7:30 A.M.—Committee on Child Health .....
Capitol Room, Hotel Saint Paul
Diabetes Committee (Table 1) .....
Continental Room, Hotel Saint Paul
Editing and Publishing Committee .....
Windsor Room, Hotel Saint Paul
Heart Committee (Table 3) .....
Continental Room, Hotel Saint Paul
Historical Committee .....
Colonial Room, Hotel Lowry
Committee on Hospitals and Medical Education ..Ramsey Room, Hotel Lowry
Insurance Liaison Committee .....
University Room, Hotel Saint Paul
Committee on Maternal Health .....
Century Room, Hotel Lowry
Committee on Military Affairs .....
Sibley Room, Hotel Saint Paul
Committee on Rural Medical Service (Table 2) .....Continental Room, Hotel Saint Paul
Speakers Bureau (Table 4) .....
Continental Room, Hotel Saint Paul
Committee on State Health Relations ..
Silver Room, Hotel Lowry

Wednesday, May 11

7:30 A.M.—Committee on Cancer .....
Windsor Room, Hotel Saint Paul
Committee on Fractures .....
Ramsey Room, Hotel Lowry
Committee on Medical Service .....
Sibley Room, Hotel Saint Paul
Committee on Medical Testimony .....
University Room, Hotel Saint Paul
Committee on Ophthalmology .....
Colonial Room, Hotel Lowry
Committee on Public Policy .....
Capitol Room, Hotel Saint Paul
Committee on Veterans Medical Service ..
Century Room, Hotel Lowry

Scientific Program

Monday, May 9

SECTION I—GENERAL SESSION

A.M.

8:30 Demonstrations—S-8, S-9 and S-13
Visit Scientific and Technical Exhibits ..... Arena

9:00 Scientific Cinema—Medical Film Guild ..... West Arena

9:00 *Clinico-Pathological Conference* ..... Auditorium Theater
Subject: INTESTINAL OBSTRUCTION—J. Arnold Bargen, Rochester, Moderator
Roentgenological Aspects—Leo G. Rigler, Minneapolis
Differential Diagnosis—Walter L. Palmer, Professor of Medicine, University of Chicago, School of Medicine, Chicago, Illinois

10:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

11:00 MANAGEMENT OF INTESTINAL OBSTRUCTION ..... Auditorium Theater
Medical Aspects—Walter L. Palmer, Professor of Medicine, University of Chicago, School of Medicine, Chicago, Illinois
Surgical Aspects—Malcolm G. Gillespie, Duluth

P.M.

Afternoon

12:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Fiesta Room, Hotel Lowry
John H. Randall, Professor of Obstetrics and Gynecology, State University of Iowa College of Medicine, Iowa City, Iowa

1:30 Visit Scientific and Technical Exhibits ..... Arena

1:30 Demonstrations—S-8, S-9 and S-13

2:00 Scientific Cinema—Medical Film Guild ..... West Arena

2:00 TRAUMA TO THE NERVOUS SYSTEM ..... Auditorium Theater
Ernest M. Hammes, Jr., Saint Paul, Moderator
Head Injuries—Leonard A. Titrud, Minneapolis
Spinal Cord Injuries—George S. Baker, Rochester
Peripheral Injuries—Roy Glen Spurling, Senior Consultant in Neurosurgery to the Veterans Administration, Louisville, Kentucky

3:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

4:00 RUSSELL D. CARMAN MEMORIAL LECTURE ..... Auditorium Theater
Roentgen Diagnosis of Lesions of the Urinary Tract—H. Dabney Kerr, Professor and Head of the Department of Radiology, State University of Iowa, College of Medicine, Iowa City, Iowa
Presentation of Speaker: John D. Camp, Rochester, President, Minnesota Radiological Society

5:00 Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena

5:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Stem Hall
John H. Randall, Professor of Obstetrics and Gynecology, State University of Iowa, College of Medicine, Iowa City, Iowa

8:30 "VARIETY NIGHT" ..... Continental Room, Hotel Saint Paul

Monday, May 9

SECTION II—SPECIAL SESSION

A.M.

9:00 ORTHOPEDIC AND FRACTURE SURGERY ..... Stem Hall
Wallace Cole, Saint Paul, Chairman
Slipping of the Upper Femoral Epiphysis—Stewart W. Shimonek, Saint Paul

9:15 *Carpal Injuries*—Malvin J. Nydahl, Minneapolis

9:30 *Delayed Primary Closure of Wounds*—Frank S. Babb, Saint Paul

9:45 *Orthopedic Aspects of Poliomyelitis*—John F. Pohl, Minneapolis

10:00 *Fractures of the Femoral Shaft*—Harry B. Hall, Minneapolis

10:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

11:00 ORTHOPEDIC AND FRACTURE SURGERY (Continued) ..... Stem Hall
Fractures of the Spine—John C. Ivins, Rochester
11:15 *Carpo-navicular Injuries*—Carl G. Caspers, Minneapolis
11:30 *Fractures of the Forearm*—Richard E. Reiley, Minneapolis
11:45 *Congenital Dislocations of the Hip*—Vernon L. Hart, Minneapolis (Motion picture)

P.M. *Afternoon*
12:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Fiesta Room, Hotel Lowry
John H. Randall, Professor of Obstetrics and Gynecology,
State University of Iowa, College of Medicine, Iowa City, Iowa
1:30 Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13
2:00 Scientific Cinema ..... West Arena
2:00 MINNESOTA CHAPTER OF THE AMERICAN COLLEGE OF CHEST PHYSICIANS .... Stem Hall
Karl H. Pfuetze, Cannon Falls, Chairman
Cytologic Examination of Sputum as an Aid in the Diagnosis of Bronchogenic Carcinoma—John R. McDonald, Rochester
Discussion: Kano Ikeda, Saint Paul—DeForest R. Hastings, Minneapolis
2:30 *Diagnosis and Treatment of Common Forms of Respiratory Allergy*—Fred W. Wittich, Minneapolis
Discussion: Leo G. Rigler, Minneapolis—George C. Roth, Saint Paul

3:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13
4.00 CHEST PHYSICIANS (Continued) ..... Stem Hall
Reversible Forms of Heart Disease—John F. Briggs, Saint Paul
Discussion: Richard L. Varco, Minneapolis—Joseph F. Borg, Saint Paul
4:30 *Differential Diagnosis of Pulmonary X-Ray Shadows*—Hilbert Mark, Minneapolis
Discussion: Gust A. Hedberg, Nopeming—Sumner S. Cohen, Oak Terrace
5:00 Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
5:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Stem Hall
John H. Randall, Professor of Obstetrics and Gynecology,
State University of Iowa, College of Medicine, Iowa City, Iowa

8:30 "VARIETY NIGHT" ..... Continental Room, Hotel Saint Paul

All convention visitors and their wives will be guests of the Ramsey County Medical Society and the Minnesota State Medical Association for an evening of light comedy, music and dancing, Monday, at 8:30 p.m. featuring
The Atomic Bums—Noted Barbershop Quartet
Episodes in the Life of a Doctor's Wife—Hennepin County Medical Auxiliary
Dancing to the Music of the *Imperials*
Light refreshments will be available during the dancing in the Continental Room.

Everybody is invited to attend.

Tuesday, May 10

SECTION I—GENERAL SESSION

A.M.
8:30 Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13
9:00 Scientific Cinema—Medical Film Guild ..... West Arena
9:00 CLINICO-PATHOLOGICAL CONFERENCE ..... Auditorium Theater
Subject: DISEASES OF THE THORAX
John F. Briggs, Saint Paul, Moderator
Roentgenological Aspects—Walter H. Ude, Minneapolis
Differential Diagnosis—Gustaf E. Lindskog, Professor of Surgery, Yale University School of Medicine, New Haven, Connecticut

10:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13
11:00 MANAGEMENT OF DISEASES OF THE THORAX ..... Auditorium Theater
Anesthesiological Aspects—Joe William Baird, Minneapolis
Surgical Aspects—Gustaf E. Lindskog, Professor of Surgery, Yale University School of Medicine, New Haven, Connecticut

P.M.

Afternoon

12:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Fiesta Room, Hotel Lowry
Howard J. Holloway, Associate in the Department of Obstetrics and Gynecology, Northwestern University Medical School, Evanston, Illinois

12:15 ROUND TABLE LUNCHEONS

1:30 Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

2:00 Scientific Cinema—Medical Film Guild ..... West Arena

2:00 A REVIEW OF CURRENT MANAGEMENT OF THE BLOOD DYSCRASIAS .. Auditorium Theater
Frank J. Heck, Rochester, Moderator
John J. Boehrer, Jr., Minneapolis
Dorothy Sundberg, Minneapolis
Louis J. Limarzi, Hematologist, University of Illinois, College of Medicine, Chicago, Illinois

3:15 *Intermission*

Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

4:00 THERAPEUTIC PROBLEMS ENCOUNTERED IN ACUTE POLIOMYELITIS .. Auditorium Theater
Robert B. Lawson, Department of Pediatrics, The Bowman Gray School of Medicine, Wake Forest College, Winston Salem, North Carolina
Presentation of Speaker: Elizabeth C. Lowry, Minneapolis, Secretary Northwestern Pediatrics Society

5:00 Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena

5:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Stem Hall
Howard J. Holloway, Associate in the Department of Obstetrics and Gynecology, Northwestern University Medical School, Evanston, Illinois

5:00 PRESIDENT'S RECEPTION ..... The Minnesota Club
Dr. and Mrs. Ernest M. Hammes cordially invite all members of the Minnesota State Medical Association, their wives and convention guests to a Reception at the Minnesota Club from five to sixty-thirty o'clock. Cocktails.

7:00 ANNUAL BANQUET ..... Continental Room, Hotel Saint Paul

Tuesday, May 10

SECTION II—SPECIAL SESSION

A.M.

9:00 SYMPOSIUM ON RESEARCH PROBLEMS ..... Stem Hall
James T. Priestley, Rochester, Chairman
Needle Biopsy of the Liver—Maurice H. Stauffer, Rochester

9:15 *The Occurrence of a Gastric Secretory Inhibitor in Gastric Mucin*—Henry V. Ratke, Rochester

9:30 *Cytologic Examination of Smears in the Diagnosis of Cancer of the Esophagus and Cardia of the Stomach*—Howard A. Anderson, Rochester

9:45 *Experimental Studies on Gastric Carcinogenesis*—Claude R. Hitchcock, Minneapolis

10:00 *Studies on External Pancreatic Secretion in Dogs with Chronic Pancreatic Fistula, with Emphasis on the Effects of Vagotomy*—Eric F. Routley, Rochester

10:15 *Intermission*

11:00 RESEARCH PROBLEMS (Continued) ..... Stem Hall
Cyanosis—Its Production and Effects—Timothy Takaro, Rochester

11:15 *Experimental Considerations in Restoration of Continuity of Superior Mesenteric Vessels*—Loren E. Nelson, Minneapolis

11:30 *The Dietary Treatment of Hypertension*—Carleton B. Chapman, Minneapolis

11:45 *The Treatment of Leukemia and Polycythemia*—Howard L. Horns, Minneapolis

P.M.

Afternoon

12:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Fiesta Room, Hotel Lowry
Howard J. Holloway, Associate in the Department of Obstetrics and Gynecology, Northwestern University Medical School, Evanston, Illinois

12:15 ROUND TABLE LUNCHEONS ..... Meeting Halls to be assigned. Hotel Lowry and Hotel Saint Paul
Laboratory Procedures in General Practice—Ellery M. James, Minneapolis
Fractures of the Elbow—S. Sverre Houkom, Duluth
Skin Diseases—Elmer T. Ceder, Minneapolis
Questions and Answers Concerning (1) Diagnosis and Treatment Hydronephrosis (2) Management of Vesical Neck Obstruction—Frederic E. B. Foley
Cancer of the Digestive Tract—Royal V. Sherman, Red Wing
Rheumatic Heart Disease—Charles N. McCloud, Jr., Saint Paul
Diabetes—Johannes K. Moen, Minneapolis
Hyperthyroidism—Samuel F. Haines, Rochester
Coronary Disease—Daniel W. Wheeler, Duluth

2:00 Use of Rectus Sheath and Superior Pubic Ligament in Direct Inguinal Hernia ..... Stem Hall, Auditorium
Illustrated Lecture: Hamlin Mattson, Minneapolis

2:20 Spinal Involvement in Poliomyelitis ..... Stem Hall, Auditorium
Illustrated Lecture: Frederic J. Kottke, Minneapolis

3:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

5:15 Obstetric Manikin Demonstration ..... Stem Hall
Howard J. Holloway, Associate in the Department of Obstetrics and Gynecology, Northwestern University Medical School, Evanston, Illinois

5:00 President's Reception ..... The Minnesota Club

7:00 Annual Banquet ..... Continental Room, Hotel Saint Paul
Presiding: John R. Aurelius, Saint Paul, President, Ramsey County Medical Society
Introduction of Mrs. Henry E. Bakkila, Duluth, President, Woman's Auxiliary
Presentation of Fifty Club Certificates
Presentation of Southern Minnesota Medical Association Medal
Presentation of Distinguished Service Medal
"The Minnesota Centennial—Its Medical History"—Ernest M. Hammes, Saint Paul, President, Minnesota State Medical Association
"Taxes Women and Hogs"—Colonel Jack Major, Paducah, Kentucky

Wednesday, May 11

SECTION I—GENERAL SESSION

A.M.
8:30 Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

9:00 Scientific Cinema—Medical Film Guild ..... West Arena

9:00 Clinico-Pathological Conference ..... Auditorium Theater
Subject: Endometriosis
Claude J. Ehrenberg, Minneapolis, Moderator
Theory of Causes and Hormonal Aspects—Ronald R. Greene, Assistant Professor of Obstetrics and Gynecology, Northwestern University Medical School, Chicago, Illinois
Pathological Aspects—Malcolm B. Dockerty, Mayo Clinic, Rochester

10:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

11:00 Management of Endometriosis ..... Auditorium Theater
Clinical Aspects—Carl P. Huber, Professor of Obstetrics and Gynecology, Indiana University School of Medicine, Indianapolis, Indiana
Surgical Aspects—Ralph E. Campbell, Professor of Obstetrics and Gynecology, University of Wisconsin Medical School, Madison, Wisconsin

P.M. *Afternoon*
12:15 Obstetric Manikin Demonstration ..... Fiesta Room, Hotel Lowry
John A. Haugen, Minneapolis

12:15 Round Table Luncheons

1:30 Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

2:00 Scientific Cinema—Medical Film Guild ..... West Arena

2:00 Manual Rotation of Occiput-Posterior Presentations ..... Auditorium Theater
Howard J. Holloway, Associate in the Department of Obstertics and Gynecology, Northwestern University Medical School, Evanston, Illinois

3:00 Arthur H. Sanford Lectureship in Pathology ..... Auditorium Theater
The Relation of the Pathologist to the General Practitioner—Leonard W. Larson, Bismarck, North Dakota, Former President of the American Society of Clinical Pathologists
Presentation of Speaker: Robert Hebbel, President, Minnesota Society of Clinical Pathologists

Wednesday, May 11

SECTION II—SPECIAL SESSION

A.M.
9:00 Minnesota Academy of Ophthalmology and Otolaryngology ..... Stem Hall
Avery De H. Prangen, Rochester, Chairman
Management and Treatment of Congenital and Adult Dacrocystitis—Ralph O. Rychener, Associate Professor of Ophthalmology, University of Tennessee College of Medicine, Memphis, Tennessee

10:15 *Intermission*
Scientific Cinema—Medical Film Guild ..... West Arena
Visit Scientific and Technical Exhibits ..... Arena
Demonstrations—S-8, S-9 and S-13

11:00 MINNESOTA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY (Continued) ..... Stem Hall
Osteoma of the Paranasal Sinuses—Olav E. Hallberg, Rochester—Joseph W. Begley, Jr., Rochester

P.M. *Afternoon*
12:15 OBSTETRIC MANIKIN DEMONSTRATION ..... Fiesta Room, Hotel Lowry
John A. Haugen, Minneapolis

12:15 ROUND TABLE LUNCHEONS—Meeting Halls to be assigned. ..... Hotel Lowry and Hotel Saint Paul
Skin Grafts—N. Logan Leven, Saint Paul
Hypertension—Frank J. Hirschboeck, Duluth
Peripheral Vascular Disease—John C. Hays, Saint Paul
Treatment of the Cervix—Wilford J. Deweese, Bemidji
Headaches—Walter P. Gardner, Saint Paul
Radioactive Isotopes—Charles F. Stroebel, Rochester
Emergency Ear, Nose and Throat Conditions—Kenneth A. Phelps, Minneapolis
Diverticulitis—John M. Waugh, Rochester
Office Procedures in Rectal Diseases—James K. Anderson, Minneapolis
Visit Scientific and Technical Exhibits ..... Arena

1:30 Demonstrations—S-8, S-9 and S-13

SAINT PAUL

1949 Convention City

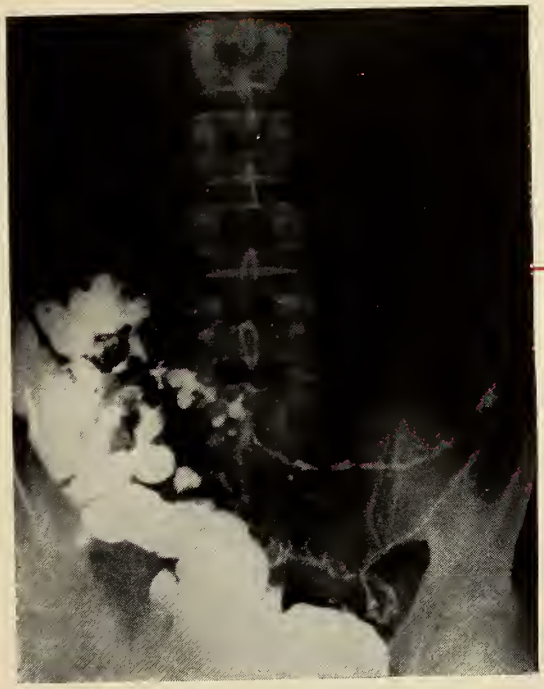


The skyline of Saint Paul

TREATMENT
OF CONSTIPATION
IN
mucous colitis

"The treatment of the constipation in mucous colic does not differ from the treatment of uncomplicated constipation. It is, as always, of great importance to avoid irritating aperients, ... The stools should be rendered soft and more bulky and therefore more easy to expel with . . . and unirritating vegetable mucilages."

—Hurst, A., in Portis, S. A.: Diseases of the Digestive System, ed. 2, Philadelphia, Lea & Febiger, 1944, p. 692.



MUCOUS COLITIS. In this x-ray is shown the distinctive string-like appearance of the descending portion of the lower bowel in mucous colitis, a condition frequently accompanying severe degrees of spastic or atonic colon. In the sagittal section is shown the over-secretion of mucus adhering to the bowel wall.



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✦ Reports and Announcements ✦

MEDICAL BROADCASTS

The subjects for health talks by Dr. Robert N. Barr, Minnesota Department of Health, from Station KUOM, Minneapolis-St. Paul, on Monday mornings at 11:15 during April and May, will be as follows:

April 4 .....Safe and unsafe water supplies
April 11 .....What can we do about cancer?
April 18.....Tuberculosis can be wiped out
April 25 .....Motherhood is safe today
May 2 .....Health for all our children
May 9 .....Minnesota's new hospitals
May 16 .....Why we need local health services
May 23 .....Accidents don't "happen"
May 30.....Health gains since the Civil War

AMERICAN ACADEMY OF NEUROLOGY

Announcement has been received of the establishment of the American Academy of Neurology, whose purpose it is to further and encourage the practice of clinical neurology and to stimulate teaching and research in neurology and allied sciences.

Active Membership in the Academy is open to every physician who has been certified in neurology or in both neurology and psychiatry. Junior Membership is available to physicians presently engaged in postgraduate studies in neurology or who are awaiting certification in neurology. In addition, there is an Associate Membership for those who are not certified in neurology but whose interests are in fields related to neurology. It is hoped that because of the unrestricted membership, this association will be representative of the entire neurological specialty and will offer an organ of expression for many of the younger men in the field. The American Academy of Neurology at present has 500 members. The first business meeting was held in Chicago in June, 1948.

The first scientific meeting will be held at the French Lick Springs Hotel, French Lick Springs, Indiana, on Wednesday, Thursday, and Friday, June 1, 2, and 3, 1949. Dr. Dave B. Ruskin of the Caro State Hospital, Caro, Michigan, is in charge of the scientific program.

The present executive council consists of Dr. A. B. Baker, Minneapolis, president; Dr. Pearce Bailey, Washington, D. C., vice president; Dr. Joe R. Brown, Minneapolis, secretary-treasurer; Dr. Frederic Lewey, Philadelphia, Dr. William A. Smith, Atlanta, Dr. J. M. Nielsen, Los Angeles, and Dr. A. L. Sahs, Iowa, Board of Trustees. Communications to the Academy should be addressed to Dr. Joe R. Brown, 19 Millard Hall, University of Minnesota, Minneapolis 14, Minnesota.

AMERICAN ASSOCIATION OF RAILWAY SURGEONS

The Sixty-First Annual Meeting of the American Association of Railway Surgeons will be held at the Drake Hotel, Chicago, Illinois, on June 30—July 2, 1949.

An exceptionally interesting and instructive scientific program has been arranged: The morning sessions will include twelve papers on various medical and surgical subjects, given by outstanding authorities. The two afternoon sessions will be devoted to symposia on "Lesions of the Bones and Joints" and "Intra-thoracic Disorders."

There will be a technical exhibit in conjunction with the scientific meetings.

The annual dinner will be held at the Drake Hotel on Friday evening, July 1, 1949.

Room reservations may be made at the Drake Hotel or at the nearby Knickerbocker Hotel.

AMERICAN BOARD OF PREVENTIVE MEDICINE AND PUBLIC HEALTH

Another specialty board, the American Board of Preventive Medicine and Public Health, approved by the Advisory Board for Medical Specialties and by the Council on Medical Education and Hospitals of the AMA, has been established and is prepared to accept applications for examinations for certification in this specialty.

In addition to the possession of an M.D. degree and a license to practice medicine, applicants must have had special training and experience in preventive medicine and public health for six years following internship.

Provision in the membership rôle has been made for a Founders Group to be composed of those who have held positions of eminence and responsibility in the field for ten years or more. No examinations will be required for Founder membership.

Further details regarding membership may be obtained from Dr. Ernest L. Stebbins, Secretary, 615 North Wolfe Street, Baltimore 5, Maryland.

AMERICAN COLLEGE OF CHEST PHYSICIANS

The Board of Examiners of the American College of Chest Physicians announces that the next oral and written examinations for Fellowship will be held in Atlantic City, June 2, 1949. Candidates for Fellowship in the College who would like to take the examinations should contact the Executive Secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

The fifteenth annual meeting of the American College of Chest Physicians will be held at the Ambassador Hotel, Atlantic City, June 2-5, 1949. An interesting scientific program has been arranged for this meeting, and speakers from several other countries are scheduled to appear.

THE AMERICAN CONGRESS OF PHYSICAL MEDICINE

The American Congress of Physical Medicine will hold its twenty-seventh annual scientific and clinical session September 6, 7, 8, 9 and 10, 1949, inclusive, at the Netherland Plaza Hotel, Cincinnati, Ohio. Scientific and

(Continued on Page 418)

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AMERICAN CONGRESS OF PHYSICAL MEDICINE

(Continued from Page 416)

clinical sessions will be given on the days of September 6, 7, 8, 9 and 10, 1949. All sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific sessions, the annual instruction courses will be held September 6, 7, 8 and 9. These courses will be offered in two groups. One set of ten lectures will consist of basic subjects and attendance will be limited to physicians. One set of ten lectures will be more general in character and will be open to physicians as well as to physical therapy technicians who are registered with the American Registry of Physical Therapy Technicians.

Full information may be obtained by writing to the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

COOK COUNTY GRADUATE SCHOOL OF MEDICINE

The Cook County Graduate School of Medicine of Chicago has arranged two courses that will be of special interest to some of the members of the Minnesota State Medical Association.

A two weeks' intensive personal course in the "Diagnosis and Treatment of Congenital Malformations of the Heart" will be offered by Benjamin M. Gasul, M.D., starting Monday, June 13.

A two weeks' intensive personal course in "Cerebral Palsy" will be offered by M. A. Perlstein, M.D., starting Monday, August 1.

Dr. Gasul and Dr. Peterson are members of the attending staff of the Cook County Hospital.

NORTHWESTERN MEDICAL ASSOCIATION

An organization of skiing physicians, the first of its kind in the world, has been formed at Sun Valley.

A group of forty-five medical men from all parts of the United States, many of them outstanding in their specialties, have banded together under the name of the Northwestern Medical Association, primarily to study winter sports from the medical viewpoint. They will meet each year at Sun Valley.

Devoted to the study of skiing safety, snow blindness, high altitude and winter diseases, the physicians came together at first socially. This year, under the leadership of Dr. L. Henry Garland, San Francisco, they organized for extracurricular study.

Dr. Vern D. Smith, of St. Paul, was named secretary-treasurer at the first meeting, and Dr. John Hochfilzer, also of St. Paul, was elected to the executive committee.

The major function of the group will be that of an advisory council, and recommendations will be made in connection with all safety aspects of skiing. Dentists and allied scientists are associated members.

Dr. Richard H. Hempstead, of Rochester, is among the three Minnesota physicians who are charter members of the group.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

At the March meeting of the Minnesota Society of Neurology and Psychiatry, held at the Town and Country Club, St. Paul, Dr. Roger W. Howell, Minneapolis, lectured on "Manic Depressive Reactions." Dr. Joe R. Brown, also of Minneapolis, spoke on "The Treatment of Cerebellar Ataxia"; and Dr. J. C. Michael spoke on "Psychiatry and Law; one recent experience."

KENNY FOUNDATION AND INSTITUTE

Dr. E. J. Huenekens, chief of staff at Sister Elizabeth Kenny Institute and clinical professor of pediatrics at University of Minnesota, has been appointed national medical director of the Kenny Foundation, it has been announced by Donald C. Dayton, Foundation president.

In his new position with the Foundation, Dr. Huenekens will be in contact with medical leaders throughout the country with the aim of creating broader understanding of the Kenny concept and treatment of poliomyelitis.

Mr. Dayton also announced that Dr. Wallace H. Cole of St. Paul, director of the division of orthopedic surgery of University of Minnesota medical school, has accepted the position of consulting orthopedist on the Kenny Institute staff.

Dr. Cole was one of three medical men who originally observed the work of Sister Kenny when she first came to Minneapolis in 1940, and his announced affiliation with the Institute renews close association with the other two, who are presently members of the staff.

They are Dr. Miland E. Knapp, chief of physical medicine in charge of training and treatment, and Dr. John F. Pohl, orthopedic consultant.

Dr. Knapp is a former president of the American Congress of Physical Medicine and former chief of staff at St. Barnabas Hospital. He is associate clinical professor of physical medicine at University of Minnesota.

Dr. Pohl is former medical supervisor at Kenny Institute.

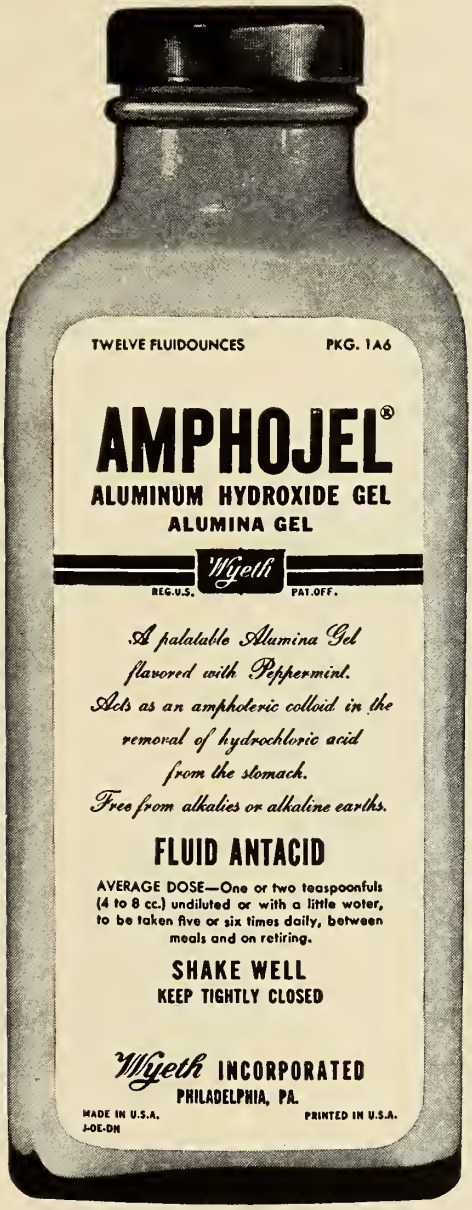
FUNDS FOR MEDICAL RESEARCH BEQUEATHED TO UNIVERSITY OF MINNESOTA

The University of Minnesota has been named recipient of a gift of approximately one-half million dollars which is to be used for medical research. The gift comes from the estate of Mr. Silas McClure, a Minneapolis businessman who died February 16, at the age of eighty-three. Previously Mr. McClure granted funds to the University in memory of his wife, Katherine Esgen McClure.

President J. L. Morrill, expressing the University's gratitude, said, "The very generous bequest provided by Mr. Silas McClure is further evidence of the general acceptance of the high professional competence of University scientists. The University is profoundly grateful."

Dr. Harold S. Diehl, dean of medical sciences at the University, said further, "Medical and health problems of vital importance need intensive study. The facilities for such studies will be provided by the Mayo Memorial and the Variety Club Heart Hospital. . . . An unrestricted fund for medical research, such as Mr. McClure has made available, will be particularly valuable. It can be

(Continued on Page 420)



IN THE MEDICAL MANAGEMENT OF PEPTIC ULCER

FUNDS FOR MEDICAL RESEARCH

(Continued from Page 418)

used for the purchase of needed scientific equipment or to provide the technical assistance and supplies. . . . Mr. McClure's generous bequest will be used to underwrite such prospecting in better health for the people, not only of Minnesota but of the world."

CONTINUATION COURSES AT MINNESOTA

The Department of Postgraduate Medical Education, University of Minnesota, announces a continuation course in Surgery for general physicians to be held at the Center for Continuation Study May 9-10-11. The course will be made up of symposia on the following subjects: varicose veins, diagnosis and management of thrombophlebitis and phlebothrombosis, diagnosis in urological conditions and a clinic on fractures.

A continuation course in General Medicine will be held at the Center for Continuation Study May 12-13-14. The course will be devoted to lectures and clinics on Hematology and Allergy. Particular emphasis will be placed on methods of diagnosis and treatment of the various allergic states.

A continuation course in Dermatology for general physicians is scheduled at the Center for Continuation Study for May 26 and 27. The course will be devoted to the diagnosis and management of the common skin disorders.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS

The annual convention of the National Society for Crippled Children and Adults will be held November 7, 8 and 9 at the Commodore Hotel, New York, according to an announcement made from Chicago headquarters by Lawrence J. Linck, executive director.

Prominent authorities working in the field of the handicapped will present latest developments at the three-day session marking twenty-eight years of service for the Society.

Delegates from 2,000 state and local affiliates of the National Society will discuss research, rehabilitation, training and treatment for the handicapped.

NU SIGMA NU BANQUET

The annual banquet of Nu Sigma Nu medical fraternity will be held Saturday, April 30, 1949, at the Minnesota Club in Saint Paul. Cocktails will be served at 5:30 o'clock, with dinner at 7:30 sharp.

Dr. Stewart Graves, executive secretary of Nu Sigma Nu and dean of the Medical School of the University of Alabama, Tuscaloosa, will be guest of honor. Dr. Archie Beard, Minneapolis, member of the National Board, will also be present. A brief report on the activities of alumni will be given by Dr. Wm. A. Hanson, Minneapolis, and on the activities of the local Active chapter by Dick Sells. Dr. Graves will give a brief address.

A room has been reserved for those who wish to remain following the dinner to play cards.

Reservations should be made by April 26 through Dr. Charles N. Hensel, 613 Lowry Medical Arts Bldg., Saint Paul 2, Minnesota. Check for tickets, at $7.50, should accompany request for reservation.

HENNEPIN COUNTY MEDICAL SOCIETY

At the regular March meeting, members of the Hennepin County Medical Society took an affirmative vote on the AMA assessment plan. Dr. Ralph Creighton, acting chairman of the Board of Directors, and Mr. Thomas P. Cook, newly elected executive secretary, spoke before the group.

NORTHERN MINNESOTA MEDICAL ASSOCIATION

A preliminary meeting of the Northern Minnesota Medical Association was held recently in Alexandria where an outline was planned for a meeting to be held on September 9 and 10, 1949, in the city of Alexandria. A general program committee was selected, tentatively including Dr. C. L. Oppegaard of Crookston, Minnesota, Mr. C. C. Carlson of Alexandria, Minnesota, Dr. Clarence Jacobson of Chisholm and Dr. W. B. Coventry of Duluth. Dr. L. F. Wassom of Alexandria is the general chairman in charge of local arrangements.

The twenty-ninth annual meeting will have a varied program of interest to the general practitioner, covering the fields of general medicine, general surgery, obstetrics, gynecology and specialties. An evening banquet on September 9, 1949, will feature a noted guest speaker. The Park Region Medical Society is host, and it is expected that this will be an unusually interesting meeting.

RAMSEY COUNTY MEDICAL SOCIETY

Two hundred fifty physicians attended the monthly meeting of the Ramsey County Medical Society which took place on the last day of February. Discussion that evening was concerned with the compulsory health insurance plan, the AMA $25 assessment and educational plan, and the Oscar Ewing Report. Five physicians spoke to the group: Dr. B. B. Souster, Dr. Ernest M. Hammes, president of the Minnesota State Medical Association, Dr. George Earl, Dr. Olof I. Sohlberg, and Dr. E. J. Fogelberg, all of St. Paul.

ST. LOUIS COUNTY MEDICAL SOCIETY

At the regular monthly meeting of the St. Louis County Medical Society held on March 10 at St. Mary's Hospital, Duluth, the attending physicians voted approval of the AMA 12-point medical and public health advancement program. Speaking to the gathering was Dr. A. O. Swenson who favors the voluntary health programs. Citing statistics, he said that some 52,000,000 Americans are now members of privately owned health insurance groups, and that the public can look forward to better coverage as memberships grow.

PHYSICIAN-ARTISTS, BEWARE!

Those planning to exhibit at the Atlantic City Exhibition (American Medical Association, June 6-10, 1949) are requested to note that—NOW is the time to write for entry blanks, rules, shipping labels, et cetera.

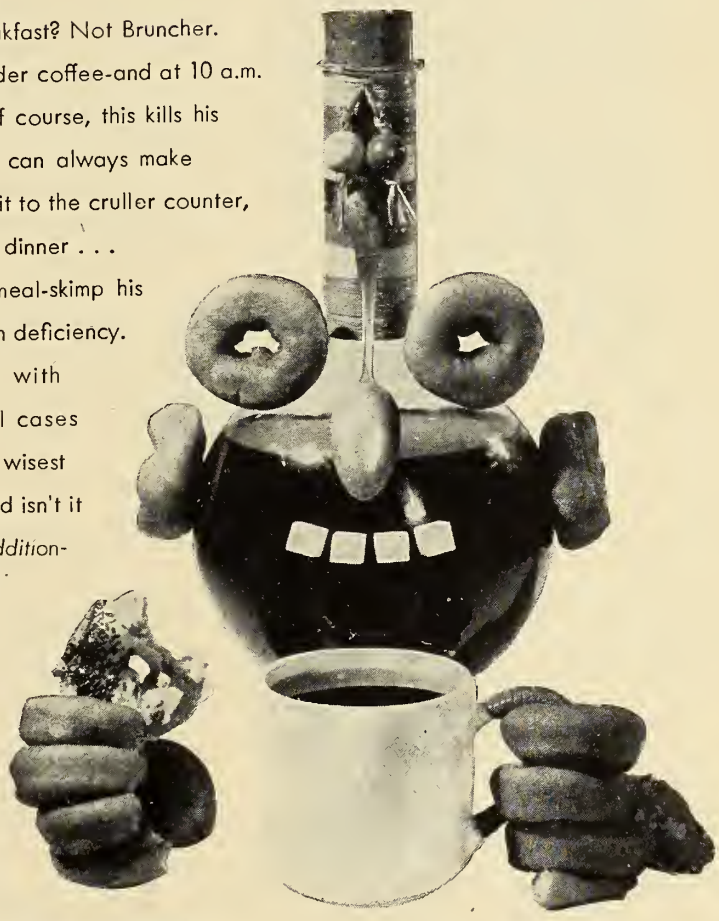
Haste is necessary, because entries must reach Atlantic City between April 15 and May 9.

For details, write airmail to Francis H. Redewill, M.D., Secretary, American Physicians Art Association, Flood Building, San Francisco, California.

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Not if you consider coffee-and at 10 a.m. as breakfast, that is. Of course, this kills his appetite for lunch, but he can always make that up by an afternoon visit to the cruller counter, which kills his appetite for dinner . . . And thus does Bruncher meal-skimp his way to a subclinical vitamin deficiency.



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SECOND SOUTHWESTERN HEALTH DAY DRAWS 1,200

Mrs. W. G. Benjamin

The second Southwestern Minnesota Health Day program was held in Pipestone at the High School Auditorium, February 22, and was one of the most outstanding health events ever held in this city or in southwestern Minnesota. More than 1,200 people gathered to hear eminent physicians and educators discuss some of the more important local health problems of today.

Since the first Health Day, which was held at Worthington in February last year, there have been five such events throughout the state at Willmar, Fergus Falls, Crookston, Mankato and Duluth.

Health Day programs are presented as a means of creating interest among the people of the state in common health problems and educating them in ways of improving personal and public health conditions. Physicians and educators have been willing to give liberally of their time and talent in promoting these projects. Interest was activated in this district by having some 200 organizations in the eight counties (Pipestone, Rock, Murray, Nobles, Cottonwood, Jackson, Lyon and Lincoln) co-sponsor Health Day, each organization giving suggestions for the program, and having a representative on the organization committee.

Many of the speakers at the meeting suggested the extension of local health services as a means of promoting better health conditions in the community. They also urged the formation of district mental health facilities and county health councils. They pointed out that these objectives may be accomplished only when all the people in a community become interested and work together for a common cause.

Twenty educational health booths and exhibits were a new and interesting feature of this Health Day. Trained personnel, representing the various health groups in the state, presented educational exhibits, showed health movies, dispensed literature, and were on hand to give information to the visitors.

The program began at nine o'clock with the local Auxiliary members acting as hostesses and nine high school students assisting with registration. Mrs. Walter G. Benjamin, Southwestern Minnesota Auxiliary president, gave the address of welcome. More than 600 people attended the morning session on mental health.

During the noon hour, through the courtesy of the city of Pipestone, a free lunch was served to all who were present.

The afternoon program opened with a panel on safety. This was followed by another panel on "Trouble Shooting Your Health Problems," and closed with the showing of health movies.

The evening session opened with a short concert by the Pipestone High School band. Mrs. Harold Wahlquist of Minneapolis, state president of the Woman's Auxiliary, gave a review of Health Days, for which she was well qualified, having been present at all the Health Day programs. Dr. Henry F. Helmholz, of the Mayo Clinic, of Rochester, was the principal speaker on the evening program. He told of existing conditions, and what is being done for the children in the devastated countries of Europe.

NEW OFFICERS FOR FREEBORN COUNTY

Mrs. Robert A. Demo is the new president of the Freeborn County Medical Auxiliary. Other officers are: Mrs. L. C. Barr, vice president; and Mrs. H. B. Neel, secretary-treasurer. All three officers are from Albert Lea.

RAMSEY TO ENTERTAIN AUXILIARIES, MAY 9-11

Mrs. W. H. Von der Weyer

Two luncheons, a style show, dramatic entertainment, a tea and a breakfast have been arranged by the Ramsey County Auxiliary for wives of physicians attending the annual Minnesota State Medical Association meeting in Saint Paul, May 9, 10 and 11.

The first luncheon will be in the Casino Room of the Hotel Saint Paul, following the Executive Board meeting Monday, May 9. At 3 p.m. there will be a tea in the lounge of the Women's City Club honoring State Auxiliary officers. That evening, in the Continental Room of the Hotel Saint Paul, there will be a variety program, including singing, motion pictures and dancing, and the Hennepin County Auxiliary will present a skit entitled, "Episodes in the Life of a Doctor's Wife."

The annual meeting of the State Auxiliary will be held at the Minnesota Club at 10:00, followed by the annual luncheon, featuring a style show.

Physicians and their wives will attend the annual Medical Association banquet Tuesday evening, and Auxiliary members will have a final conclave Wednesday morning at a 10 o'clock breakfast at the Hotel Saint Paul.

CANCER ACTIVITIES VARIED

Mrs. Mark E. Ryan

The State Auxiliary, following a twelve-month calendar of public health projects, is turning its attention to cancer during April by taking stock of what has already been done and what new activities can be started.

For many years, the Auxiliary has been affiliated with the Minnesota Division of the American Cancer Society. The Auxiliary Executive Board includes a Cancer Committee chairman who keeps the Auxiliary informed of the work being done by the Cancer Society and its need for assistance.

The state-wide poster-essay contest on cancer, which is annually sponsored by the Minnesota Division of the American Cancer Society and the Woman's Auxiliary to the Minnesota State Medical Association, has just been completed. More than 12,000 children participated,

(Continued on Page 424)

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CANCER ACTIVITIES VARIED

(Continued from Page 422)

indicating the interest which this type of cancer education has stimulated.

Many Auxiliary members attended the cancer school for lay people held at the University's Center for Continuation Study, February 18 and 19. The course is conducted by the State Cancer Society to educate its corps of workers in the newest developments and progress in the field of public health.

An unprecedented volume of requests for funds and dressings has accelerated County Auxiliary efforts. Many of the units are engaged in making dressings to supply county nurses who care for indigent cancer patients. Many supplies are also being channeled to Our Lady of Good Council Hospital in Saint Paul. This hospital, one of six of its kind in the United States, was opened in 1941 and has a 100-bed capacity, with four large wards. Any patient is admitted, regardless of religion, color, sex, age or place of residence. The only requirement is a written statement from the physician that the patient is incurably ill and indigent.

NURSE RECRUITMENT TEAS ON DOCKET

Mrs. Russell Hendrickson

Junior and senior high school girls will be entertained at tea in Moorhead, Barnesville, Hawley, Lake Park and Detroit Lakes by the Clay-Becker Auxiliary. A speaker at each tea will supply information concerning the various types of nursing services and their training requirements.

This is the second project undertaken recently by the Clay-Becker Auxiliary. Members held a sale at Detroit Lakes of articles made by patients of Sand Beach Sanatorium. They plan next year to expand the sale, which is an annual event, to neighboring cities.

ANNUAL AMA AUXILIARY MEETING, JUNE 6-10

Haddon Hall will be the headquarters for the annual meeting of the Woman's Auxiliary to the American Medical Association, scheduled for Atlantic City, New Jersey, June 6-10.

Requests for reservations are to be sent to Dr. Robert A. Bradley, Chairman, Subcommittee on Hotels, 16 Central Pier, Atlantic City, New Jersey.

O'BRIEN MEMORIAL PLANS COMPLETED

Mrs. Harlow Hanson

Over a period of years, the Woman's Auxiliary to the Minnesota State Medical Association has been actively interested in health education. For counsel and guidance, members frequently turned to Dr. William A. O'Brien. No matter how rushed he was in his busy daily life, he always found time, not only to give valued suggestions, but to contribute appreciably to the success of Auxiliary programs throughout the state with his unforgettable health talks. His fund of information seemed inexhaustible, and his own special way of reaching the public with his message inspired a keener interest in public and personal health.

In appreciation of Dr. O'Brien's unceasing interest, a memorial fund is being established by the members of the State Medical Auxiliary. A desk and chair will be placed in his honor in the Dr. O'Brien Memorial Seminar room in the Mayo Memorial building, at the University of Minnesota.

MIDWINTER BOARD MEETING

Mrs. W. A. Merrit

Forty Auxiliary members met at the Continuation Center of the University of Minnesota, February 24, for the mid-winter meeting of the board of directors and heard Mrs. H. F. Wahlquist, state president, report on the Chicago conferences of November 4 and 5.

Special reference was made to discussions on school health, the Ewing report and the facilities of the National Physicians Committee and the American Medical Association.

The president-elect, Mrs. H. E. Bakkila, reviewed scholarship fund procedure and commented on the hospitality proffered to guests at the Chicago conference.

Mrs. Mark Ryan reported a two-day cancer school, stressing a threefold program: service, research and education.

Mrs. Benjamin Souster, Auxiliary editor for MINNESOTA MEDICINE, thanked the journal for the space given the Auxiliary and urged auxiliaries to send material to her, or to the office of the Minnesota State Medical Association.

Mrs. C. L. Sheedy outlined methods of selling *Hygeia* and reported an increase in subscriptions over last year. Mrs. Bakkila announced that Clay-Becker and McLeod Counties have reorganized.

Mrs. Hubert Johnson's public relations report on Health Days held in Worthington, Willmar, Fergus Falls, Crookston, Duluth, Mankato, Pipestone, Minneapolis and Saint Paul was amplified by William Griffiths of the Minnesota Department of Health. Mr. Griffiths gave credit to the Auxiliary and its president for introducing the program in Minnesota. "The approach through education is best," he pointed out. "Laws are ineffective until people are ready for them. The educational process is a slow process; people are not enlightened overnight."

He added that Health Days—and the Health Councils that are developing from them—are a direct answer to Mr. Ewing. "They are the democratic way of doing things."

The National Health Assembly, held in Washington, D. C., in February, was reviewed by Dr. F. J. Elias. After describing briefly the AMA's co-ordinating committee of fifty-three members and the work being done by the public relations counsel of Whitaker and Baxter, he told the women that the first job ahead is defeating, within the next sixty days, the Wagner-Murray-Dingell Bill. "Secondly, we must develop a long-term program so we can completely destroy compulsory health insurance—by educating the public to the issues involved and by taking the financial shock out of illness through encouragement of voluntary insurance plans," he said.

Mrs. Elmer Rusten, legislative chairman, cited the

(Continued on Page 428)

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In Memoriam

GILBERT COTTAM

Dr. Gilbert Cottam, former Minneapolis doctor and leader in Minnesota and South Dakota medicine, died Friday, March 4, 1949, in Pierre, South Dakota, at the age of seventy-five.

A well-known surgeon and medical spokesman, Dr. Cottam left Minneapolis in 1940 to practice in Sioux Falls, S. D. He became superintendent of the South Dakota State Board of Health, at Pierre, in 1943.

Dr. Cottam was born in Manchester, England, and came to the United States at the age of sixteen.

He was graduated from St. Louis (Mo.) University in 1893, practiced at Rock Rapids, Iowa, until 1910, at Sioux Falls until 1930, and then for ten years in Minneapolis.

At various times he was president of the South Dakota State Medical Association, a governor of the American College of Surgeons, president of the Sioux Valley Medical Association, associate editor of MINNESOTA MEDICINE and editorial board member of *Journal-Lancet*.

In the Hennepin County Medical Society, he was a trustee and executive committee member and editor of *The Bulletin*.

Dr. Cottam was a leader in the movement "to provide the public with information as to who is a specialist and who is not," and in 1927 became one of the founders of the American Board of Surgery.

During World War I, he was a major in the army medical corps and surgical chief at the 88th base hospital in France. In World War II, he headed emergency medical service at the Sioux Falls Office of Civilian Defense.

He wrote many scientific papers and held many medical posts.

BYRON O. MORK, SR.

Dr. B. O. Mork, Sr., dean of the southwestern Minnesota medical profession and one of the founders of the Worthington Clinic, died March 2, 1949, at the age of eighty-two.

Byron Olaf Mork was born in Hjorundford near Aalesund, Norway, March 28, 1867. As a lad of nineteen, he came to the United States in 1866, worked several years with an Indian agency at Granite Falls and on farms before entering Hamline University, where he qualified for his bachelor's degree in 1898.

It was early in the first decade of the present century that Dr. Mork gained his M.D., at Hamline, at the age of forty.

After about a year in Hills, Dr. Mork moved to Worthington in 1908, to remain the rest of his life, to round out forty years in the practice of his profession.

His first associate in medical circles was Dr. Henry Wiedow, with whom he operated the old City Hospital. In 1918, Dr. Mork entered partnership with Dr. F. G. Watson of Rushmore, and Dr. G. C. Turner.

In 1920 the three partners were joined by three others —Drs. F. W. Metcalf and C. R. Stanley, Fulda, and Dr. J. T. Smallwood, Worthington, in formation of the Worthington Clinic.

Dr. Mork was married in 1899 at Wood Lake to Maude Coghlan, mother of his three children: Elmer, who died during the 1918 influenza epidemic; Byron O. Jr., now a clinic staff physician, and Raymond E., present Nobles County attorney. Mrs. Mork died in 1940. He was married in 1942 to Mrs. Metcalf, widow of his former associate, who also survives him. There are three grandchildren.

ANGUS W. MORRISON

Dr. Angus W. Morrison, prominent in Minneapolis medical and civic affairs for thirty-five years, died January 28, 1949, at Eitel Hospital. He was sixty-five years old.

Dr. Morrison was a member of a pioneer Minneapolis family. His grandfather, Dorilus Morrison, was the city's first mayor in 1867, and was associated with many of the early industries.

Dr. Morrison was one of the founders of the Nicollet Clinic.

For several years he was a member of the staff at the University of Minnesota Medical School, and for many years a member of the staff at General Hospital.

He was a member of the American Neurological Society, American Psychiatric Society, American Medical Association and other medical organizations. He served as a captain in the medical corps of the United States Army in France in World War I.

Retiring from an active practice of medicine in 1931, Dr. Morrison became prominently identified in the business life of his city.

Dr. Morrison was born in Minneapolis July 18, 1883, the son of Clinton and Julia Washburn Morrison. He lived his entire life in the Twin Cities area. His home at his death was at Maplewoods, Wayzata.

He was educated in Minneapolis schools; Hotchkiss school, Lakeville, Conn.; Yale University, and Johns Hopkins Medical School.

He took postgraduate work in Munich, Berlin and London and served an internship at the Royal Victoria Hospital, Montreal, Canada. He started the practice of medicine in Minneapolis in 1912, specializing in neurology and psychiatry.

In 1914, Dr. Morrison was married to Helen Truesdale, and she survives him. Other survivors include a daughter, Mrs. John P. Snyder, Jr.; three sons, Clinton, Angus and John; and five grandchildren, all of Wayzata.

(Continued on Page 428)



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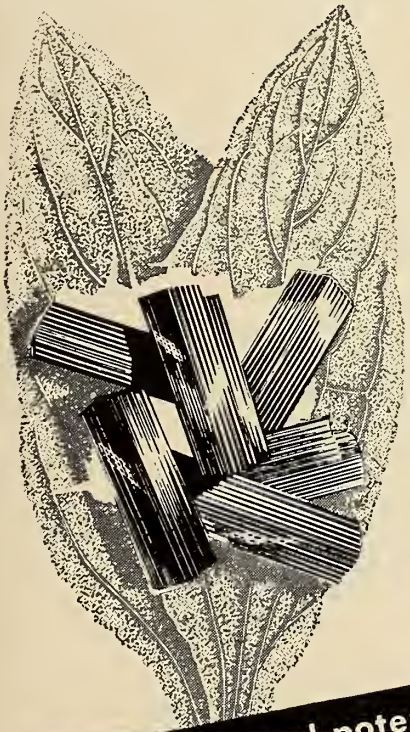
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G. ALLEN SATHER

Dr. G. Allen Sather, practicing physician in Fosston, Minnesota, for forty years, died at his home in Fosston, February 14, 1949, at the age of sixty-eight.

Dr. Sather was born August 15, 1881, at Cannon Falls, and lived at Willmar. His medical training was received at the University of Iowa, from which he received the M.D. degree in 1908. He practiced medicine for a short time at Ridgeway, Iowa, and was married there to Clara Mathilda Ringoen in 1909. That year they moved to Fosston.

In addition to his medical practice, Dr. Sather was mayor of Fosston for several terms, a director of the Farmers State Bank and once president of the board. He was a member of the Red River Valley Medical Society; the Minnesota State Medical Association and the American Medical Association.

Dr. Sather was preceded in death by his wife who died December 12, 1948.

Survivors include four sons and one daughter: Dr. George Sather, Fosston; Dr. Norman Sather, Mora; Dr. Edgar Leland Sather, Flatrock, Michigan; Dr. Andrew Sather, Bemidji, and Mrs. Luther Moore, Lexington, Kentucky.

He is also survived by his sister, Mrs. Helen Riemen, Glencoe; and three brothers: O. P. Sather, Minneapolis; Dr. Edgar Sather, Alexandria; and Frank Sather, Minneapolis.

HERBERT P. SAWYER

Dr. H. P. Sawyer, resident of Goodhue, Minnesota, for forty-four years, died on the morning of March 10, 1949, in a Red Wing hospital. He had been in failing health for several years.

Born in Steele County, November 25, 1870, Dr. Sawyer attended country schools, graduating from the Owatonna high school in 1899. The following two years he taught school, then attended the medical department of the University of Minnesota in 1901. Following his graduation, he began practice in Goodhue village in 1905 and continued in active practice until 1931 when he retired.

During his practice in Goodhue, Dr. Sawyer was associated at various times with Drs. C. E. Gates, S. V. Gausemal and George Dewey. His marriage to Miss Minora Backman took place in Goodhue in 1920.

Survivors include his wife, one sister-in-law, Mrs. G. A. Sawyer of Minneapolis, and one niece, Margaret, also of Minneapolis.

ROY G. SPURBECK

Dr. Roy G. Spurbeck, widely known Cloquet physician, died at his home on February 12, 1949. He had been in ill health a number of years.

Born in Mantorville, Dr. Spurbeck moved with his parents to Two Harbors as a boy, residing there several years. He was a graduate of Northwestern University medical school. He practiced medicine at Proctor for a couple of years and in 1917 came to Cloquet, continuing until poor health forced his retirement.

Dr. Spurbeck was a member of the Minnesota State Medical Association, the St. Louis County Medical Society, Dallas lodge, local Masonic Order, and of the Scottish Rite, Duluth Masonic Chapter.

He is survived by his widow, Ruby, Cloquet; a son, Dr. George Spurbeck, Menominee, Wisconsin; a daughter, Mrs. Sherman Borsheim, Duluth, and two grandchildren.

WOMAN'S AUXILIARY

Midwinter Board Meeting

(Continued from Page 424)

need for speakers and listed material that would be valuable to them. Mrs. W. H. Von der Weyer, chairman of the Committee on Arrangements for the annual meeting, extended an invitation to the functions being planned for the entertainment of members and visitors at the annual meeting in Saint Paul, May 9, 10 and 11.

HENNEPIN DISCUSSES COMMUNITY HEALTH

Mrs. R. F. Erickson

Hennepin County Health Day, March 4, centered around a panel discussion of "A Successful Health Program Needs Community Support."

Dr. Gaylord Anderson, head of the Public Health Department of the University of Minnesota, moderated the discussion. Panel members were: Dr. Clare Gates, city health department; Dr. Hermina Hartig, school health department; Mrs. Ruth T. Devney, director of community information; Calvin Aurand and Mrs. John C. Benson, health action committee; Dr. Charles Merkert, chairman of the public health committee of the Hennepin County Medical Society; Ann Hauser, county nursing service; George E. Johnson, alderman from the eighth ward and member of the health and hospitals committee of the Minneapolis Council.

Movies on cancer, mental hygiene and accidents were shown during the noon hour, with commentary by Mrs. Netta Wilson of the Minnesota Department of Health.

During the afternoon session, Dr. Robert McGandy spoke on "Trends in the Practice of Medicine," and Gov. Luther W. Youngdahl presented his proposed mental hygiene program for the state.

The next project of the Hennepin County Auxiliary is a benefit luncheon and style show, April 18. Tickets, at $2.50, may be obtained by writing or calling Mrs. Donald MacKinnon, 4000 W. 24th Street, Whittier 4457, or by writing the Hennepin County Medical Auxiliary, 2000 Medical Arts Building, Minneapolis.

"Town Meeting" in Rochester

"America's Town Meeting" will present a broadcast on Tuesday, April 26, in connection with National Mental Health Week. The topic will be "How Can We Find Personal Peace and Security in Today's World?" and the broadcast will take place from the Arena in Rochester, Minnesota.

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Of General Interest

Dr. Henry E. Michelson of Minneapolis has been elected a corresponding member of the Danish Dermatological Society.

* * *

Dr. R. G. Swenson of North Branch was taken to the Rush City Hospital in February where he underwent an appendectomy.

* * *

Dr. R. R. Kierland of Rochester was elected president of the Minnesota Dermatological Society at its meeting in Minneapolis in February.

* * *

While Dr. and Mrs. A. K. Stratte of Pine City vacationed in March, Dr. Stratte's practice was temporarily cared for by Dr. Joseph D. Waller, also of Pine City.

* * *

Dr. Edward D. Anderson was elected to the board of members of the Minneapolis Community Chest in February.

* * *

Dr. Edward Bratrud of Thief River Falls returned to his Florida home at Green Acres in February after a business visit of a week in Minnesota.

* * *

Dr. and Mrs. Raymond Minge, of Worthington, recently of Minneapolis, announced the birth of a son, John Christofer, late in February.

* * *

Dr. R. F. Hedin of Red Wing was elected to membership in the Central Surgical Association at the meeting held in Cleveland, in February.

* * *

Dr. T. J. Dry of the Mayo Clinic spoke on March 8, to the Dane County Medical Society in Madison, Wisconsin, his topic being "Diagnosis of Congenital Cardiac Anomalies which are Amenable to Surgery."

* * *

Dr. M. J. Robertson of Cottonwood was transferred recently to the Veterans Administration Domiciliary Center at Clinton, Iowa, where he will serve as chief medical officer.

* * *

In Glenwood, on February 24, Dr. Edward Elsey opened the Elsey Clinic in a newly erected building. In order to carry on his work there adequately, he has closed his private offices in downtown Glenwood.

* * *

Dr. J. B. Maunder, Cannon Falls, who has been associated with Dr. M. R. Williams, is leaving his practice to study in Detroit, Michigan, where he will do postgraduate work in obstetrics and gynecology.

* * *

Dr. W. C. Rasmussen of the Mayo Clinic spoke on "Neurologic Manifestations of Systematic Disease" at a meeting of the Cass County Medical Society, Fargo, North Dakota, in March.

* * *

Assisting in the Morrison County Red Cross fund drive this year is Dr. John E. Weber of Little Falls. Five ward chairmen will work under Dr. Weber, choosing solicitors.

* * *

Dr. J. F. Weir of Rochester spoke on "Differential Diagnosis of Jaundice for Surgery" in February when he attended the meeting of the Central Surgical Association in Cleveland, Ohio.

* * *

The new office of Dr. John Hermanson of Luverne was nearing completion in March. Dr. Hermanson's new location will be equipped with an x-ray machine and new clinical apparatus.

* * *

Dr. James Learmouth, former Mayo Foundation Fellow, was called in as an official medical consultant to attend King George VI of England who recently underwent an operation in an attempt to correct the arterial obstruction which is endangering his right foot.

* * *

Dr. A. B. Rosenfeld of Minneapolis spoke on "Child Health" early this year at the Red River Valley Winter Show in Crookston, under the sponsorship of the Woman's Club. Dr. Rosenfeld accompanied his talk with a motion picture, "We'll See Them Through."

* * *

Dr. John C. Burton of St. Paul, because of a promotion received recently in the Veterans Administration, is transferring to the central offices in Washington, D. C. Dr. and Mrs. Burton will make their home in Washington.

* * *

Dr. D. C. Anderson of Olivia opened an office recently in Danube where he maintains morning office hours. His afternoons are devoted to his office in Olivia. Dr. Anderson, formerly with the Seifert Clinic in New Ulm, located in Olivia in October, 1948. He was recently appointed health officer of Danube.

* * *

Speaking at the regular meeting of the McLean County Medical Society in Bloomington, Illinois, in March was Dr. M. B. Dockerty of Rochester who presented a paper entitled, "Cystic and Solid Tumors of the Ovary."

* * *

On March 1, Dr. Richard A. Whitney, formerly of Cambridge, moved to Princeton where he will be associated with Dr. Alfred Kapsner at the Princeton Clinic. Dr. Whitney's move terminates an eleven-year practice in Cambridge.

* * *

It has been announced that Dr. Noel E. Tosseland has opened offices at 925 Medical Arts Building, Duluth, for the practice of general surgery. Dr. Tosseland recently completed a fellowship in surgery at the Mayo Clinic.

(Continued on Page 432)

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96th ANNUAL MEETING SAINT PAUL—MAY 9-11

(Continued from Page 430)

Dr. Manley F. Juergens, formerly of Minneapolis, has joined the staff of the Johnson-Haberle Clinic in Thief River Falls, where he is specializing in the practice of internal medicine and roentgenology.

* * *

Dr. Robert L. Nelson of Duluth attended the Chicago Medical Society Clinical Conference in Chicago during March. Also attending were Dr. L. W. Johnsrud and Dr. F. W. Bachnick of Hibbing. The meeting was held at the Palmer House.

* * *

Dr. and Mrs. Byron Kinkade, originally of Caledonia, now residents of Minot, North Dakota, returned home for a visit in February to visit Rev. and Mrs. R. L. Kinkade. From Caledonia, they traveled to Ohio, visiting the parents of Mrs. Kinkade.

* * *

Dr. J. R. McDonald of Rochester presented two papers during February in Minneapolis, giving a Kellogg Lecture on "The Pathology of Bone Tumors"; and to the Minnesota Pathological Society, a paper: "The Smear Technic as an Aid in the Diagnosis of Cancer."

* * *

The son of the late Dr. J. J. Donovan of Litchfield, Dr. Thomas Donovan of Houston, Texas, died on March 7, at the age of thirty-eight. Surviving are his wife and three children. Dr. Donovan served as a military physician in World War II.

Dr. James A. Johnson, Minneapolis, was named to judge essays in the Hennepin County state-wide essay and poster contest sponsored by the Minnesota Cancer Society.

* * *

Dr. L. F. Richdorf, clinical associate professor of pediatrics at the University of Minnesota, delivered a talk on breast and bottle feeding before physicians attending the short course on pediatrics offered at the University's Center for Continuation Study early in February.

* * *

Dr. J. R. McDonald, Rochester, speaking at the Center for Continuation Study at the University of Minnesota, in March, presented a paper entitled, "The Cytologic Examination of Body Secretions for Cancer Cells." Among state physicians attending the lecture was Dr. D. S. Branham of Albert Lea.

* * *

Dr. D. J. Erickson of the Mayo Clinic read two papers at the postgraduate course in physical medicine and rehabilitation at the University of Texas Medical Branch in Galveston, Texas, last month. They were: "Physical Medicine in Rehabilitation to Geriatrics," and "Rehabilitation of the Paraplegic."

* * *

Dr. Christopher Graham, the only surviving partner of the Mayo brothers, was the subject of a pictorial interview in the February issue of *Friend*, a General Motors

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publication. Dr. Graham, who lives in Rochester, is a member of the board of directors for the Mayo Foundation.

* * *

Dr. Q. S. Baker of Rochester began the management of a neurosurgical clinic in February at the United States Army Hospital, Oliver General Hospital, in Augusta, Georgia. Recently he presented a paper to the staff on "A Clinical Appraisal of the Problem of Protruded Intervertebral Disk."

* * *

Drs. D. C. Campbell and W. D. Seybold of Rochester addressed the Chippewa County Medical Society, Chippewa Falls, Wisconsin, in February. Dr. Campbell spoke on "Newer Methods of Treating Blood Dyscrasias," while Dr. Seybold spoke on "Acute Abdominal Emergencies."

* * *

Dr. H. R. Butt of Rochester attended the Medical and Surgical Symposium, sponsored by the Watts Hospital at Durham, North Carolina, in February. Participating in a clinicopathologic conference, he presented a paper entitled "Evaluation of Current Tests for Liver Function."

* * *

Dr. Adelaide M. Johnson, psychiatric consultant for the Mayo Clinic, spoke at the annual meeting of the Family and Children's Service in Minneapolis on February 7, stressing the need for "a block of time" of reading, research and teaching in the training of social workers.

On March 9, Dr. Victor Johnson, Rochester, presented a paper to a joint meeting of the Philadelphia County Medical Society and the American College of Physicians, a meeting which marked the hundredth anniversary of the former organization. Dr. Johnson's paper was entitled, "Medical Education: The Past Century and the Future." The meeting was held in Philadelphia.

* * *

Dr. S. S. Houkum and Dr. W. A. Klein of Duluth presented a report on the annual meeting of the American Academy of Orthopedic Surgeons, held in Chicago earlier this year, to members of the St. Louis County Medical Society, at a meeting held on March 10. Speaking also before the group was Dr. Frank J. Elias who talked on pending medical legislation.

* * *

The home of the late Dr. Donald Colp, situated in Robbinsdale, has been converted into a twenty-nine-bed rest home. Dr. Edward Colp son of the late physician, is opening his offices in the new building. Modern equipment is being installed to care for the chronic, convalescent and aged patients there. The home was opened early in March.

* * *

Dr. L. F. Leitschuh, originally of Sleepy Eye, has just completed his residency at St. Mary's Hospital, Minneapolis, where he specialized in obstetrics and gynecology. He is planning to establish private practice in Minneapolis. Dr. Leitschuh's brother, Captain Robert Leitschuh, will receive his discharge from the army in

July, at which time he will accept a three-year residency at the Veterans Hospital in Milwaukee, specializing in orthopedics and general surgery.

* * *

Among those present at the University of Minnesota's Center for Continuation Study for the course in heart disease were: Dr. Sidney A. Whitson, Dr. Donald S. Branham, and Dr. Daniel L. Donovan, Albert Lea; Dr. A. J. Lenarz, Browerville; Dr. A. Neumaier, Glencoe; Dr. R. J. Wilkowske, Owatonna, and Dr. Julius C. Buscher, St. Cloud.

* * *

Dr. Reynold Jensen, who is in the pediatrics department at the University of Minnesota, spoke at the Junior Chamber of Commerce Alumni Luncheon in February, at the St. Cloud Hotel. Dr. Jensen's topic was, "Your Child's Mental Health." This talk was presented as part of St. Cloud's observance of University of Minnesota Week.

* * *

Dr. Conrad Karleen of Minneapolis spoke at the final meeting of the in-service course on conservation of human resources sponsored by the department of special education and rehabilitation, Minneapolis Public Schools. The meeting, held in Bryant Junior High School, took place on March 15. Dr. Karleen discussed reconstructive surgery with the group.

* * *

Dr. J. M.McMahon, Mayor Clinic, speaking at the Mid-Continent Regional Park and Recreation Conference, on February 25, emphasized the importance of recreation and hobbies as part of the mental health program of any individual. He described particular programs which can be community and family-wide aids. The meeting, held in Rochester, had over 100 attendants.

* * *

Dr. Deno Wedes of St. Paul has recently become associated with Dr. G. F. Engstrom, Willmar, in the practice of medicine and surgery. Dr. Wedes completed his internship at the University Hospital in Madison, Wisconsin, and shortly thereafter engaged in special studies in internal medicine at the University of Wisconsin.

* * *

Dr. O. T. Clagett of the Mayo Clinic in February, spoke in Wichita, Kansas, where he presented two papers to a joint meeting of the Sedgwich County Medical Society and the Wichita Medical Society. His first paper was entitled "Surgical Management of Lesions of the Stomach and Duodenum"; the second, "Surgical Treatment of Congenital Anomalies of Great Vessels."

* * *

Dr. J. W. Pender, Rochester, presented a talk to the Kansas Section of Anesthesiology at Emporia, Kansas, early this year, speaking on "Responsibilities of the Future Anesthesiologist." While in Kansas, he spoke to a joint meeting of the Kansas Section of Anesthesiology and the Lyon County Medical Society on "Anesthesia for Abdominal Surgery."

* * *

Dr. Albert Faulconer of Rochester lectured for a course at the George Washington University School of



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Medicine, Washington, D. C., in February. The lectures presented were: "Anesthesiology: Oximeter, Gas Analysis, Blood Pressure and Flow, and So Forth," and "Oxygenation: Relation to Inhalation and Intravenous Anesthesia."

* * *

Dr. F. J. Hill, Minneapolis city health commissioner, announced in February that an additional room would be opened at the Well-Child Clinic, at Third Street and Third Avenue South, for the convenience of shoppers in the Loop area. The clinic, which opened on February 21, 1949, will be in operation on both Mondays and Fridays.

* * *

Dr. Leo F. Twiggs, originally of Benham, Kentucky, moved in February to Austin where he is associated in practice with Dr. Paul Leck. Dr. Twiggs is a graduate of the University of Michigan Medical School, 1941. His internship was served at the Henry Ford Hospital in Detroit, following which he entered the armed services.

* * *

Dr. J. K. Butler of Carlton visited Chicago in February to attend the fourth annual meeting of the National Conference on Rural Health and the National Conference on Medical Service. Dr. Butler acted in the capacity of a delegate from the seventh Minnesota district. Later that month, Dr. Butler attended the course on cardiovascular diseases at the University of Minnesota's Center for Continuation Study.

* * *

Recently appointed to head the department of pediatrics at Stanford University was Dr. John A. Anderson of Minneapolis. Dr. Anderson's new assignment will begin in September of this year. Formerly Dr. Anderson served as chairman of the Pediatrics Department of the University of Utah; and from 1937 to 1943, as a member of the faculty at the University of Minnesota Medical School, of which he is a graduate.

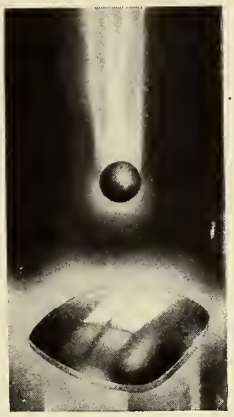
* * *

At a meeting of the Central Surgical Association held in Cleveland, Ohio, in February, two physicians from Rochester delivered papers. Dr. E. S. Judd presented a paper written in collaboration with Dr. L. H. Beahrs: "Epithelioma of the Lower Lip: Evaluation of the Cervical Lymph Node Dissection." Dr. J. G. Love presented "Transplantation of the Spinal Cord for Paraplegia Due to Pott's Disease of the Spine."

* * *

Among the forty physicians from Minnesota who attended the first national meeting of the American Academy of General Practice were Dr. H. B. Clark, St. Cloud, and Everett J. Schmitz of Holdingford. They attended in the capacity of official state delegates. Noteworthy among business covered was the unanimously approved statement against compulsory health insurance. The group asked also that the American Medical Association standardize and regulate medical and surgical training programs as offered throughout the nation.

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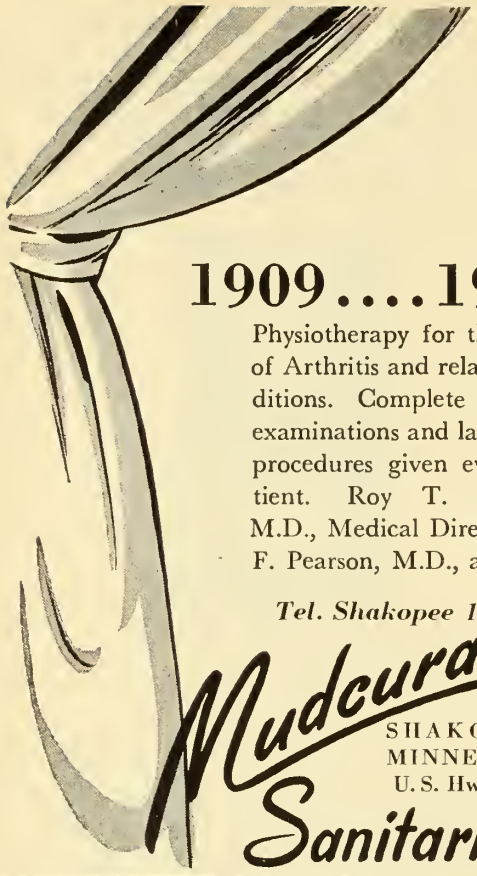
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A meeting sponsored by the Dakota County Republican Committee was held in the public clinic of the Hastings State Hospital in March. Lectures on mental health were presented by Dr. Ralph Rossen, superintendent, and two of his assistants, Drs. Bradley and Brown. The 100 guests listened also to Superintendent Farrell of the Red Wing Training School as he talked on a program for correlating mental studies with delinquency problems.

* * *

Dr. Harvey Knoche, a graduate of Worthington College and the University of Minnesota in 1945, is establishing offices in Morgan in association with Dr. William E. Johnson. Dr. Knoche interned in Buffalo, New York, after which he joined the United States Public Health Service at the Marine Hospital in Portland, Maine, later serving in Mayport, Florida. Dr. Knoche then transferred to Detroit, Michigan, where he was in charge of chest diseases and, later, out-patient work.

* * *

Three Rochester physicians attended the Annual Clinical Conference of the Chicago Medical Society which took place in that city early in March. Each physician presented a paper to the group: Dr. J. L. Emmett spoke on "The Surgical Treatment of the Urinary Retention." Dr. H. M. Weber spoke on "Diagnosis of Early Intestinal Cancer," later participating in a round-table discussion. Dr. H. W. Woltman addressed the group on "The Influence of Arteriosclerosis on the Central Nervous System."

* * *

Recently the Mayo Clinic opened a lounge for members emeritus of the Clinic staff, of which there are sixteen at the present time. The room, equipped to serve as a library, writing room and lounge for social relaxation, is located on the fifth floor of the Clinic building. Present emeritus physicians are: Drs. Samuel Amberg, W. M. Boothby, W. R. Braasch, J. L. Crenshaw, B. S. Gardner, H. Z. Griffin, Christopher Graham, B. E. Hempstead, W. S. Lemon, A. H. Logan, W. C. MacCarty, J. C. Masson, Albert Miller, E. C. Rosenow, F. L. Smith, and C. G. Sutherland.

* * *

Hennepin County Community Health Day, held on March 4, brought together representatives of more than 300 women's organizations. Speakers for the occasion were: Dr. Gaylord Anderson, head of the public health department of the University of Minnesota Medical School; Dr. Clare Gates, Minneapolis Health Department physician; Dr. Hermina Hartig, public school physician; and Dr. Charles Merkert, public health chairman of the Hennepin County Medical Society. Also speaking were several representatives of lay organizations.

* * *

Dr. Gaylord W. Anderson, director of the school of public health at the University of Minnesota, attended an inter-American conference of health and sanitation officers held in Quito, Ecuador, March 27-April 2.

As a member of the staff of consultants with the division of health and sanitation of the Institute of Inter-

American Affairs, Washington, D. C., Dr. Anderson met with twenty-five or thirty health and medical officers from fourteen American countries.

The staff conference discussed institute affairs and planned the division's future program. Visits were made to several field projects.

* * *

Giving the John Black Johnston Memorial Lecture at the University of Minnesota's Museum of Natural History in January was Dr. Paul C. Bucy, who is professor of neurology and neurological surgery at the University of Illinois Medical College in Chicago. The Johnston lecture is given each year in honor of Dr. J. B. Johnston who established the University's College of Science, Literature and Arts. Dr. Bucy's lecture was on the control of muscular infirmities by surgery of the brain. Dr. Bucy spoke also, on the following day, at the Center for Continuation Study, his topic being spinal injuries.

* * *

On Saturday, February 19, Dr. William A. Coventry, Duluth physician, was honored as the twenty-fifth person to be named to the local Hall of Fame.

Dr. Coventry, a graduate of the University of Minnesota, was one of the founders of the Duluth Clinic in 1916. He has served as president of the St. Louis County Medical Society, and he was governor of the American College of Surgeons in 1940. Dr. Conventry has also served as president of the Minnesota State Medical Association and is a recipient of an award from that group.

Dr. William D. Coventry of Duluth and Dr. Markham Coventry of Rochester are sons of Dr. Coventry.

* * *

The February issue of *Reader's Digest,* reprinting an article from the *American Mercury*: "You Add Years to Your Life," designated that the headquarters of the American Geriatrics Society was situated in Minneapolis. As a result of this mis-statement (headquarters are in Rhode Island), the office of the medical journal, *Geriatrics* (published in Minneapolis) has been plagued with hopeful inquiries by the aging who are looking for better health, greater strength and longer lives. The situation indicates great eagerness on the part of the increased population of the aged to use these later years to good advantage.

* * *
* * *

Reported as attending the course in pediatrics which was offered in February at the Center for Continuation Study by the University of Minnesota were the following: Dr. Ralph E. Wenzel, Blue Earth; Drs. Silas W. Giere, Richard P. Griffin, and Walter H. Sutherland, Benson; Dr. Troy G. Rollins, Elmore; Dr. Eugene L. Zorn, Erskine; Drs. Willard Hall Peterson and Lyle V. Berghs, Owatonna; Dr. Marie K. Bepko, Cloquet; Dr. Carl J. Luckemeyer, St. Cloud; Dr. Raymond C. Hottinger, Janesville; Dr. Harry Shragg, Elmore; Drs. Sidney Finkelstein and Philip A. Kleiger, Cass Lake; Dr.



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Albert J. Lenarz, Brownersville. Physicians from Brainerd attending the course were Drs. Malcom D. McGreary and Francis J. Schnugg. From Willmar came Dr. Roger P. Michaels, and from Albert Lea, Dr. Robert A. Demo.

* * *

The 27,677 cases of poliomyelitis reported in 1948 makes the last year next to the worst in the twenty-two years during which the Public Health Service has been keeping accurate records for the country. In 1916, approximately 29,000 cases were reported. During January and February of this year, 759 cases have been reported —an all-time high for these two months. This compares with 270 cases for this two-month period last year, and 500 for the same period in 1947. Thus, the number of cases reported for January and February is not indicative of the year's total.

* * *

Dr. George E. Moore, a graduate of the University of Minnesota Medical School and specialist in surgery and onocology, was one of thirteen young physicians of the country to receive the John and Mary R. Markle Foundation Scholarship this year. This award, which totals $23,000, will cover a five-year period of study which Dr. Moore will take at the University of Minnesota. The Scholarship plan, begun in 1948, has made awards to twenty-nine physicians to date, and it is estimated by Mr. John Russell, executive director of the Foundation, that a total of fifty physicians will be recipients over the five-year period of the Foundation's existence.

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The National Cancer Institute granted funds totaling $671,200 toward further laboratory and clinical research in cancer on March 25, it was announced by the Federal Security Administration. Three physicians from the University of Minnesota are being financed in their research in consequence. Dr. Jerome T. Syverton was granted $14,711 to continue his work in immunological studies on mice mammary cancer and leukemia. Dr. John J. Bittner, receiving $21,925, will study the genesis of mammary cancer in mice. A grant of $6,750 was made to Dr. Arthur Kirschbaum who is doing research on the induction of experimental therapy for leukemia in mice.

* * *

Dr. Myron J. Weaver, present assistant dean of the University of Minnesota Medical School, will leave the University in July to become dean of the new medical school at the University of British Columbia near Vancouver, Canada. The school will open in the fall of 1950.

Dr. Weaver has served on the faculty at the University of Minnesota for six years. He is an attending physician at the Minneapolis General Hospital, and senior attending physician at the University Hospitals.

An alumnus of Wheaton College and the University of Chicago, Dr. Weaver began his work at the University of Minnesota in the capacity of assistant professor of preventive medicine and public health. He was named to his present position in 1944.

* * *

Dr. Malcolm A. McCannel of St. Paul has recently become associated with Dr. Walter Camp, with offices in Minneapolis. Dr. McCannel's newly assumed practice is limited to opthalmology and opthalmic surgery.

A graduate of the University of Minnesota, Dr. McCannel received his M.D. degree from Temple University School of Medicine, Philadelphia, Pennsylvania, in 1941. He interned at St. John's Hospital in Brooklyn, New York, transferring later to Ancker Hospital in St. Paul. He obtained a teaching Fellowship in opthalmology at the University of Minnesota, doing graduate work at the New York Postgraduate Hospital in New York. In 1946, Dr. McCannel received a Master of Science degree in ophthalmology from the University of Minnesota and shortly thereafter was certified as a Diplomate of the American Board of Ophthalmology.

* * *

The "outstanding young man in Minneapolis for 1948" designated by the Junior Chamber of Commerce of Minneapolis is Dr. Robert A. Huseby, assistant professor of cancer biology at the University of Minnesota. The award was conferred on Thursday, March 10, at a "Bosses Night" dinner at Coffman Memorial Union.

In 1948, Dr. Huseby was awarded the William A. O'Brien assistant professorship in cancer, a field he has specialized in since 1941 when he first worked with Dr. M. B. Visscher, head of the department of physiology. For a year (1944) Dr. Huseby studied at the Rockefeller Institute in New York, under the scholarship award, the International Cancer Research Fellowship. His present

work is with Dr. John Bittner. Dr. Huseby is a native of Minneapolis and a graduate of the University of Minnesota Medical School.

* * *

Three Minnesota physicians have issued a report recently on the medical care afforded the Indian population. Drs. W. F. Braasch, Rochester; B. J. Branton, Willmar, and A. J. Chesley of St. Paul, have served as an investigation committee sponsored by the American Medical Association. The committee was established shortly after the dismissal of twenty-eight positive tuberculous Indian patients from an up-state sanatorium because of insufficient subsidy from the United States Government. Listing a seven-point program, the report asks for the construction of new hospitals for the Indian territories and for an educational program which will work towards the eventual integration of the Indian with contemporary American educational, health and social standards—a change which, the committee stated, would be economically and socially beneficial to the entire Northwest area.

* * *

The Saturday Evening Post, in two successive January issues, recognized the work of several Minnesota physicians. The first article, "Are We Winning the War Against TB?" told of the work of Drs. Corwin Hinshaw, F. M. Feldman and Karl Pfuetze and their work with streptomycin. Dr. Hinshaw is president of the American Trudeau Society and a member of the Mayo Clinic staff. Dr. Feldman is now living in Washington, D. C., and Dr. Pfuetze is medical director of the Mineral Springs Sanatorium at Cannon Falls.

The second of the two articles was concerned with Dr. John S. Lundy who is head of the Mayo Clinic section on anesthesia. Entitled, "Sing Me to Sleep, Doctor," the article told of Dr. Lundy's work, describing also an oxygen intake signal unit which has been developed by Drs. Albert Faulconer and Roger W. Ridley of the Mayo staff, with the aid of R. E. Jones of the Clinic's engineering department.

* * *

Bids on the construction of the new student health service building were opened by University of Minnesota officials during the first week of April.

The site of the new building will be the area just west of University Hospitals and south of the Botany building. The building will be four stories high and will face on Church Street with a frontage of 183 feet. It will be eighty-two feet in depth.

Contained in the building will be examination rooms, doctor's offices; a large eye, ear, nose and throat clinic; a dental clinic with space for ten dental chairs; an x-ray section and spacious waiting lounges. No bed space has been provided in plans for the new building as the health service will retain its bed space on the fourth and fifth floors of the present building, which is a part of the University Hospitals plant. A tunnel under Church Street will connect the two buildings.

Estimated cost of the building will be in excess of $750,000, and the structure will be paid for out of health service earnings. Magney, Tusler and Setter, Minneapolis architects, prepared the plans.

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Esophageal Surgery, one week, starting June 13.
Thoracic Surgery, one week, starting June 20.
Breast and Thyroid Surgery, one week, starting June 27.
GYNECOLOGY—Intensive Course, two weeks, starting April 18, June 20.
Vaginal Approach to Pelvic Surgery, one week, starting April 4, May 16, June 13.
OBSTETRICS—Intensive Course, two weeks, starting April 4, May 16.
MEDICINE—Intensive Course, two weeks, starting June 13.
Electrocardiography and Heart Disease, two weeks, starting July 18.
Gastroenterology, two weeks, starting June 27.
Personal Course in Gastroscopy, two weeks, starting May 16, June 13.
PEDIATRICS—Intensive Course, two weeks, starting April 4.
Diagnosis and Treatment of Congenital Malformations of Heart, two weeks, starting June 13.
DERMATOLOGY—Formal Course, two weeks, starting May 2.
Informal Clinical Course, every two weeks.
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UROLOGY—Intensive Course, two weeks, starting April 18.

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Indicative of the widespread interest shown by both medical and lay groups of Minnesota concerning the problems posed by compulsory health insurance and socialized medicine, are meetings devoted to lectures and discussion groups dealing with this problem. Among such meetings recently held are the following:

Dr. Donald K. Freedman, a staff member of the Arrowhead Health Center, Inc., spoke before the Saturday Lunch Club at a meeting held at the Medical Arts Building in Duluth late in February.

Dr. Martin O. Wallace spoke to the Arrowhead Civic club in Duluth late in January at a meeting held in the Arrowhead Hotel. He spoke also before a meeting of the Duluth Republican Women's Club on the same topic.

Dr. Myron Weaver, assistant dean of the University of Minnesota Medical School, speaking in February at the Center for Continuation Study during a course on hospital administration, expressed his view on the trends and problems concerned with socialized medical plans.

Dr. John W. Beuning, public relations officer of the Stearns-Benton Medical Society, spoke at the regular meeting of the East St. Cloud Boosters Club in February, discussing similar issues.

Dr. Haddon M. Carryer of Rochester spoke before the Mayo Foundation in February. Dr. Carryer, acting as secretary of the Olmsted-Houston-Fillmore-Dodge County Medical Society, spoke in explanation of the implications of the Oscar Ewing Report.

Dr. A. W. Adson of Rochester, past president of the Minnesota State Medical Association and member of the State Board of Medical Examiners, spoke before the Minnesota House of Representatives in March, expressing his views on the co-operative medical care bill.

The 1949 Farm Forum, which was held on March 10 and 11 at the Radisson Hotel in Minneapolis, under the sponsorship of the Chamber of Commerce, launched a debate on compulsory health insurance which is one of the issues confronting farmers at the present time.

Dr. Mitrofan Smorszczok of Freeport, a displaced Polish physician, lectured over station KFAM on March 11, presenting a report on socialized medicine as it has operated in various European countries. His talk, "Socialized Medicine as I Saw It," was given as one of a radio series on this problem being sponsored by the Stearns-Benton Medical Society. Earlier that same week, on March 9, Dr. Smorszczok spoke before the Exchange Lunch Club at the St. Cloud Hotel. His talk was descriptive of state subsidized medicine as found specifically in the USSR.

Speaking before the Saturday Lunch Club in Duluth on March 12 was Dr. Martin O. Wallace. Dr. Wallace explained his view of socialized medicine to the attending members, stating that he feared that the standard of medical service would be lowered with the advent of a government-sponsored medical plan.

Dr. H. J. Jeronimus, Duluth physician and surgeon, spoke to the members of the second district Minnesota Nurses Association at St. Mary's Hospital, Duluth, on March 14. He urged that the government consider the solving of more stressing problems—sanitation, housing, and so forth—before attempting to better the already high level of health service in America.

HOSPITAL NEWS

Dr. J. T. Loughlin of Grey Eagle was elected president of the St. Gabriel Hospital medical staff on February 15, succeeding Dr. G. M. A. Fortier of Little Falls. Dr. A. M. Watson of Royalton was elected vice president, and Dr. R. J. Stein, of Pierz, secretary. Named to the Executive Committee were: Drs. R. T. Healy of Pierz, S. W. Watson of Royalton, and G. M. A. Fortier of Little Falls. The meeting was held in St. Gabriel's Hospital in Little Falls.

* * *

Re-elected as Chief of Staff at St. Mary's Hospital in Minneapolis this year, was Dr. F. B. Mach. Dr. Mach has been a member of the hospital staff for over thirty years.

* * *

Newly elected as chief of staff of the Fairview Hospital is Dr. Arthur C. Skjold. Dr. Silas Anderson has assumed the post of vice chief of staff; Dr. Harry Mixer, that of secretary, and Dr. Stanley Stone, that of treasurer. Elected to the Executive Committee were Dr. Donald B. Frane, Dr. Harry B. Hall, Dr. Louis J. Roberts, and Dr. R. W. Kouchy.

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Ancker Hospital has established extra facilities recently for the care of children's heart diseases. Under the leadership of Dr. Ivan D. Baranofsky, assistant professor of surgery at the University of Minnesota Medical School, arrangements are being made so that Ancker Hospital can assume some of the care, treatment and surgery in heart cases formerly carried solely by the University Hospitals. Dr. Baranofsky will perform the greater amount of surgery, and a new one-bed room has been provided on the floor near his office in Ancker Hospital so that the problem of postoperative observation will be lessened.

BLUE SHIELD NEWS

On December 31, 1948, Minnesota Medical Service Inc., or Blue Shield—as it is more commonly called—completed its first year of service to the people of Minnesota. Much progress was made in that year, so much in fact that the Minnesota Blue Shield received national recognition from Paul R. Hawley, M.D., Chief Executive Officer, Associated Medical Care Plans, which is the co-ordinating office of all Blue Shield plans.

This wonderful growth can best be explained in the few words published in the *Blue Cross Bulletin,* January-February, 1949, which quotes Mr. A. M. Calvin, Minnesota Blue Cross-Blue Shield Executive Director: "With living costs high as they are today, paying for medical care has become a very serious problem for the majority of people. They are enrolling in Blue Shield because they find this non-profit benefit plan the right answer to their medical care problems."

The success of the Blue Shield plan in Minnesota to date is due to the support, loyalty and assistance given by the doctors of Minnesota, the Board of Directors of Blue Shield, by Mr. F. Manley Brist—the attorney who has spent much time attending meetings both organizational, state, and national, by the employes of Blue Cross and Blue Shield, and to the general public which has accepted Blue Shield in the same spirit that it accepted Blue Cross fifteen years ago.

The year 1948 was a good one for Minnesota Blue Shield and Blue Cross. This was also true nationally. Minnesota enrolled 130,369 participant subscribers, of which 100,000 were made effective as of December 31, 1948; and an income of $328,007.77 was received. A total of $169,269.90 (51.5 per cent) was returned to the subscribers in the form of payments to doctors of medicine for services rendered Blue Shield patients; and $32,860.80 (10 per cent of the income) is in reserve for unreported cases. A total of 61.5 per cent of income was used for subscribers' care. Operating expenses for the year amounted to $45,531.03 (13.9 per cent of earned income).

During the year allowances were made on 2,449 surgical cases in the amount of $113,813.44; this comprises 67.2 per cent of the total services allowed. Medical service rendered to hospitalized patients only (1,831 cases) amounted to $43,516.16 (25.7 per cent). Obstetrical services totalled 185 cases, amounting to $9,241.00 (5.5 per cent). The remaining amount of $2,699.00 (1.6



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per cent) was allowed for such ancillary services as x-rays, anesthesia, assisting and after-care.

The greatest number of surgical services were for surgery of the bones, joints, and tendons, these amounting to 400 cases; gynecology, 337 cases; surgery of the skin, 309 cases; tonsillectomies, 212 cases; appendectomies, 210 cases. The largest amounts allowed on any one category were: $20,805.26 for gynecology, $16,045.50 for appendectomies, and $14,866.11 on surgery of the bones, joints, and tendons.

Blue Cross also had an outstanding year, and at the end of 1948 893,662 participant subscribers were enrolled. A total of $7,111,649.00 was allowed toward hospital bills of Blue Cross patients, an increase of 42.3 per cent over 1947; thus, 87.5 per cent of the Blue Cross income was returned to the subscribers in benefits. 11.2 per cent was used for administrative expenses.

A brief look at the national picture will show that national Blue Shield enrollment has reached 10,000,000, with an excess of $65,000,000.00 being paid for benefits during the past year. Blue Cross nationally now covers nearly 32,000,000 subscribers and total benefits paid during 1948 were over $250,000,000.00.

During February, the Minnesota Blue Shield office mailed a supply of Home and Office Medical Service Report forms to all its participating doctors. Unfortunately, many of the forms have been returned as unclaimed or unlocated. The mailing list in the Blue Shield office is maintained from the addresses appearing in the annual State of Minnesota Directory of Licensed and Registered Physicians and Surgeons. However, since many changes can occur between publication dates of each new Directory, it is requested that the Blue Shield office be informed of any address changes of the Minnesota doctors of medicine. In this way Blue Shield service can be improved to the satisfaction of all concerned.

Announcing the Opening of the

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A new, modern and beautifully equipped rest home, situated in "park-like" setting overlooking Crystal Lake. A registered nurse and large competent staff are prepared to give our patients semi-professional care. A limited number of private, semi-private and ward beds are now available for the immediate placement of chronic, convalescent and elderly patients. Your inspection of the premises is invited. Inquiries from you and your patients will be courteously answered. JUniper 1938, 3805-15 West Broadway, Robbinsdale, Minnesota.

BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

AESCULAPIUS COMES TO THE COLONIES. The Story of the Early Days of Medicine in the Thirteen Original Colonies. Maurice Bear Gordon, M.D. 560 pages. Illus. Price $10.00, cloth. Ventnor, N. J.: Ventnor Publishers, Inc., 1949.

EVERYDAY PSYCHIATRY. Second Edition. John D. Campbell, M.D. Diplomate American Board of Neurology and Psychiatry; Psychiatrist to St. Joseph's Infirmary and Crawford W. Long Hospital, Atlanta, Georgia; Instructor in Psychiatry, Emory University Medical School; Captain M.C., U.S.N.R. 394 pages. Price $6.00, cloth. Philadelphia: J. B. Lippincott Co., 1949.

CORONARY ARTERY DISEASE. Ernest P. Boas, M.D. Associate Physician, Mount Sinai Hospital, New York City, and Norman F. Boas, M.D. 399 pages. Illus. Price $6.00, cloth. Chicago: Year Book Publishers, Inc., 1949.

DOCTORS OF INFAMY; THE STORY OF THE NAZI MEDICAL CRIMES. By Alexander Mitscherlich, M.D., Head of the German Medical Commission to Military Tribunal No. 1, Nurenberg and Fred Mielke. Trans. by Heinz Norden. 172 pages. Illus. $3.00. New York: Henry Schuman, 1949.

In this book of 172 pages is found a story of the medical crimes perpetrated in Nazi Germany. It gives documentary evidence of the medical atrocities performed by Nazi physicians under the guise of necessary experimentation. It illustrates the depths of degradation which was reached by many of the German physicians who were believers and followers of a false ideology.

This book, although depressing, is well worth reading for the lesson it teaches of a medical professon that succumbed to Fascism.

JOHN F. BRIGGS, M.D.

LECTURES TO THE LAITY. 174 pages, price $2.50. New York: Columbia University Press, 1949.

This latest volume of the New York Academy of Medicine's Lectures to the Laity reflects a forward-looking perspective that does credit to the Academy. Six eminent authorities discuss research and progress upon six of the most vitally important frontiers of medical research.

The list of contributing authors begins with Lewis L. Strauss of the U. S. Atomic Energy Commission and the Naval Research Advisory Board, who discusses the atom in civil life. Sir Raphael Cilento, director of the Social Division of the United Nations, surveys the relationship between food and civilization. Dr. Edward J. Stieglitz covers the lively subject of geriatrics; Dr. Cornelius P. Rhoads looks into the future of cancer research; Dr. William C. Menninger covers the subject of psychiatry for everyday needs; and James B. Conant,



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President of Harvard University, contributes the final chapter, an acute and masterly discussion of the interrelation of pure and applied science in the field of medicine.

PATHOLOGY AND SURGERY OF THYROID DISEASE. By Joseph L. DeCourcy, M.D., Senior surgeon of the Good Samaritan Hospital, Cincinnati, Ohio, and Dr. Cornelius B. DeCourcy, resident member of staff of the Good Samaritan Hospital, Cincinnati, Ohio. 476 pages. Springfield, Illinois: Charles C. Thomas, 1949.

This book is a new and comprehensive discussion of every phase of thyroid anatomy, histology, pathology, pharmacotherapy and surgery, representing a review of more than 15,000 case histories of patients treated for thyroid disease at the DeCourcy Clinic, Cincinnati.

Dr. Joseph L. DeCourcy, author of the volume, is nationally known for his research in thyroid surgery. He has been a member of the American Goiter Association for two decades and a fellow of the American College of Surgeons. His son, Dr. Cornelius B. DeCourcy, is co-author of the work.

In addition to providing detailed information on new chemotherapy and the use of radio-active iodine in diagnosis and treatment, the book presents the most recent developments in thyroid surgery. The technique which has been perfected by the authors themselves is described in careful detail, supplemented by illustrations on each phase of the various procedures used. Meanwhile the authors have remained scrupulously unbiased in evaluating divergent or conflicting theories and principles, utilizing more than 673 references.

The book is a comprehensive and detailed review of the literature on every aspect of the many problems of the thyroid and the future of thyroid surgery.

SAFEGUARDING MOTHERHOOD. By Sol T. DeLee, M.D., Clinical Instructor of Obstetrics and Gynecology, University of Illinois; Attending Obstetrician at the Chicago Maternity Center; Former Associate in Obstetrics and Gynecology, Cook County Hospital. 135 pages, Illus. Price $2.00. Philadelphia: J. B. Lippincott Co., 1949.

Motherhood, a sacred event for a woman that is more or less dreaded by all expectant mothers, is very beautifully covered in this treatise.

It is almost superfluous to make any gestures when none other than J. P. Greenhill, M.D., precedes the text of the book by an excellent foreword. He is the same gentleman who does such a splendid job in editing the Yearbook of Obstetrics and Gynecology.

It is safe to say that this book will reach 90 per cent of the laity mothers. It is clear; it is simple, and it is not arbitrary. I can see in it the same clearness and simplicity that is evident in my 3rd edition of Principles and Practice of Obstetrics by the late Joseph B. DeLee, M.D., who is an uncle of this author. With due respect to other books on obstetrics, I still treasure as a keepsake this 3rd edition for the reasons mentioned and because it brings back memories of my undergraduate days.

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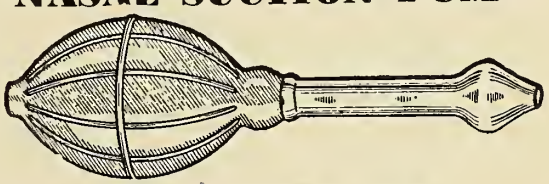
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JOSEPH F. BICEK, M.D.

GIFFORD'S TEXTBOOK OF OPHTHALMOLOGY. By Francis H. Adler, M.D., Professor of Ophthalmology, University of Pennsylvania Medical School. 4th edition. 512 pages. Price $5.50. Philadelphia and London: W. B. Saunders Company, 1947.

This comprehensive revision was completed by the ophthalmologist chosen for this task by Dr. Gifford. Dr. Adler strove to carry out the original purpose of

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the textbook; that is, to cover facts of value to the medical student and general practitioner. To this end, he has given special attention to minimizing the more technical aspects (refraction and operative procedures) and enlarging on the practical fundamentals.

The revisor's interest in physiology resulted in a great increase in physological material in order that the principles underlying disorders of the eye may be understood more clearly. The chapter on "Disturbances of Ocular Motility" has been entirely rewritten. The chapters on "Ocular Manifestations of General Disease" and on "Ocular Disorders of the Central Nervous System" are expanded, pertinent and valuable. In the former, Dr. Adler considers more than sixty common diseases, their eye signs and symptoms, and treatment in each case. The chapter on therapeutic agents includes such new drugs as penicillin and streptomycin.

An innovation is the addition of bibliographic references at the end of each chapter. These are of most value to the graduate student. More than seventy per cent of the 431 excellent illustrations are new for this edition.

This textbook ostensibly may be written for medical students and general practitioners, yet its well-prepared, up-to-date material will be found very useful to the postgraduate student or practicing ophthalmologist.

F. F. Wipperman, M.D.

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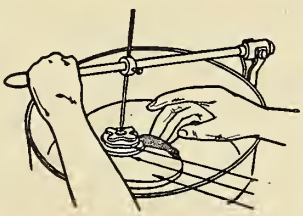
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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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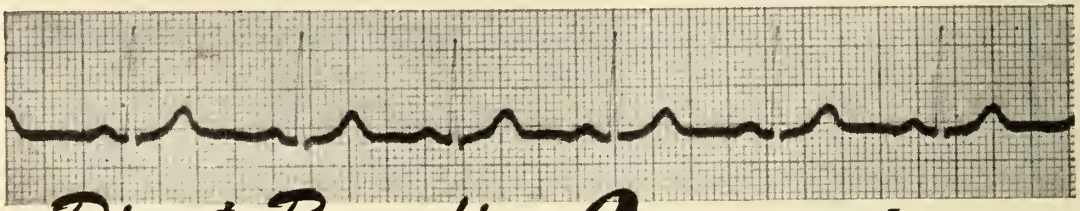
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(1) Joslin, E. P.: Postgraduate Med. 4:302 (Oct.) 1948. (2) Kemper, C. F.: Rocky Mountain M. J. 45:1092 (Dec.) 1948. (3) Pollack, H.: New York Med. 4:15 (Dec. 5) 1948.

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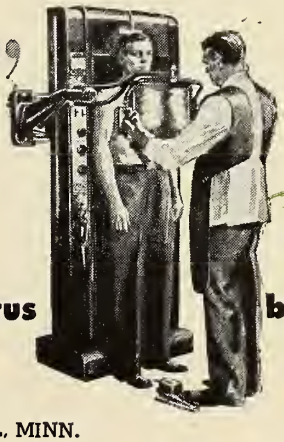
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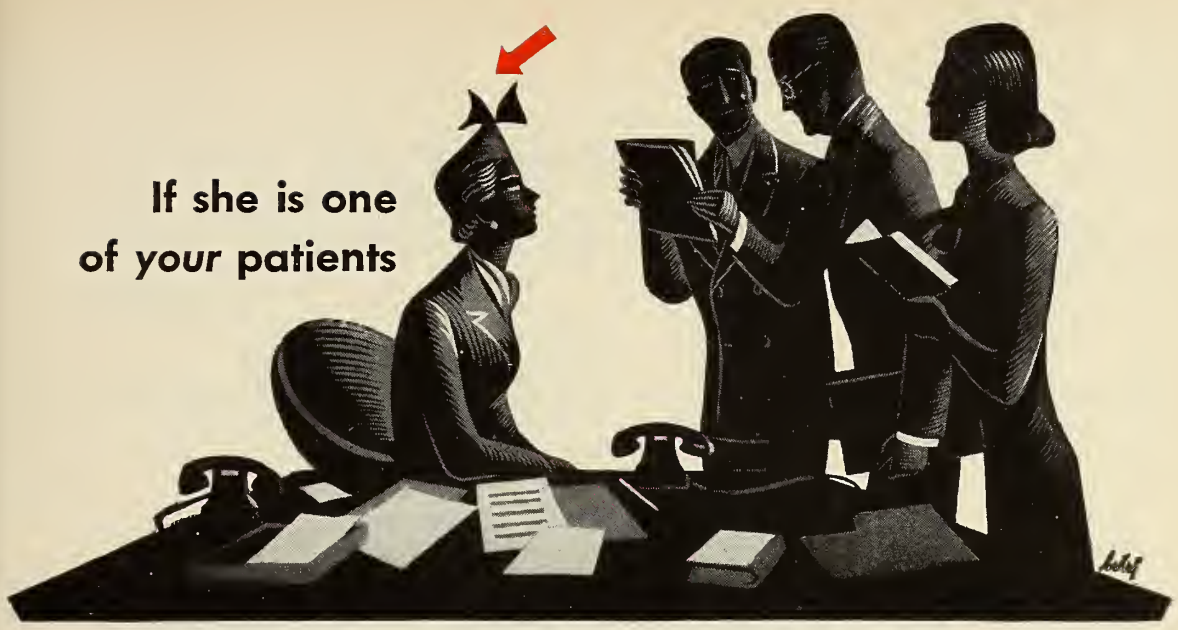
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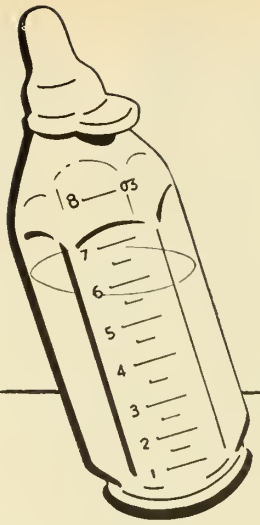
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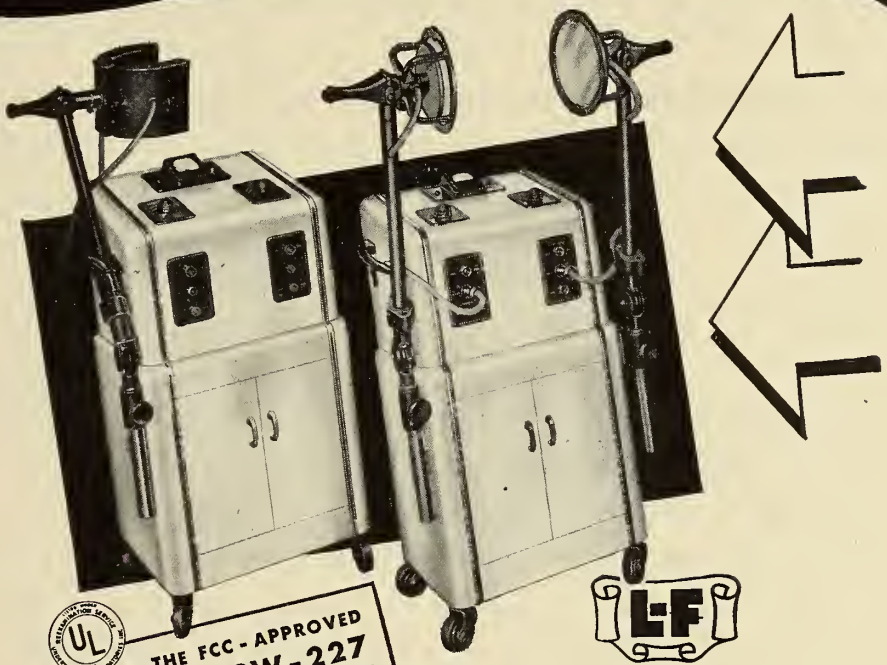
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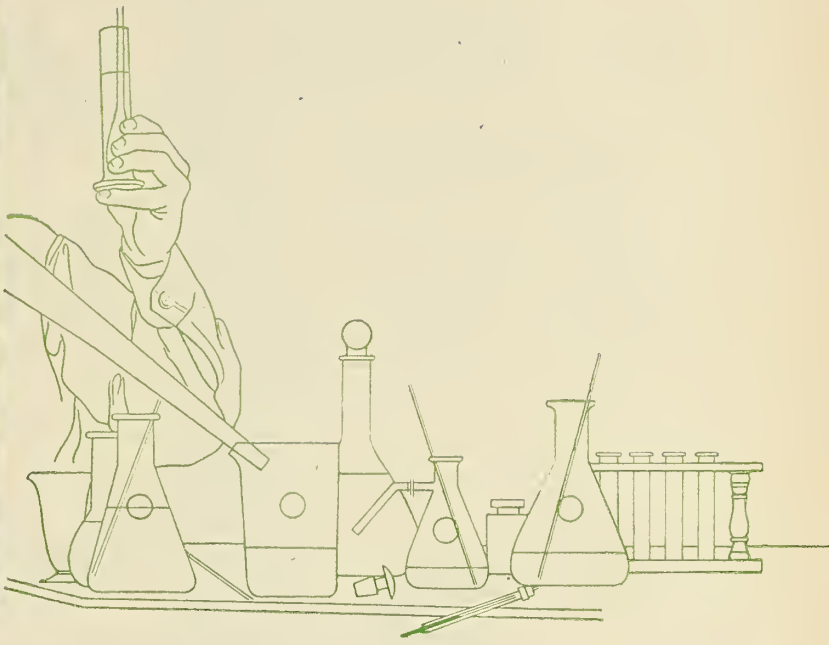
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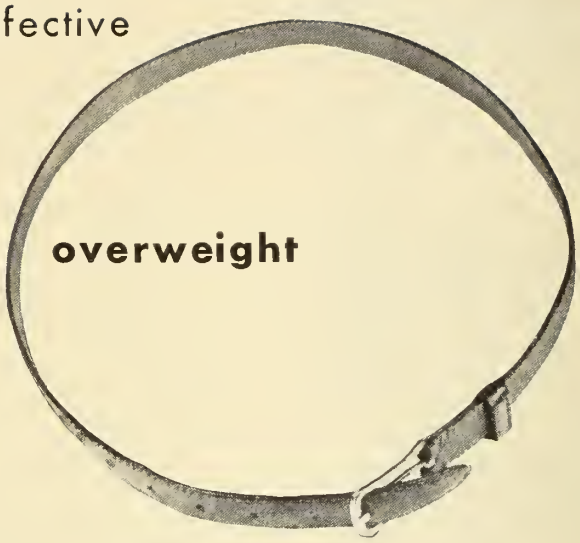
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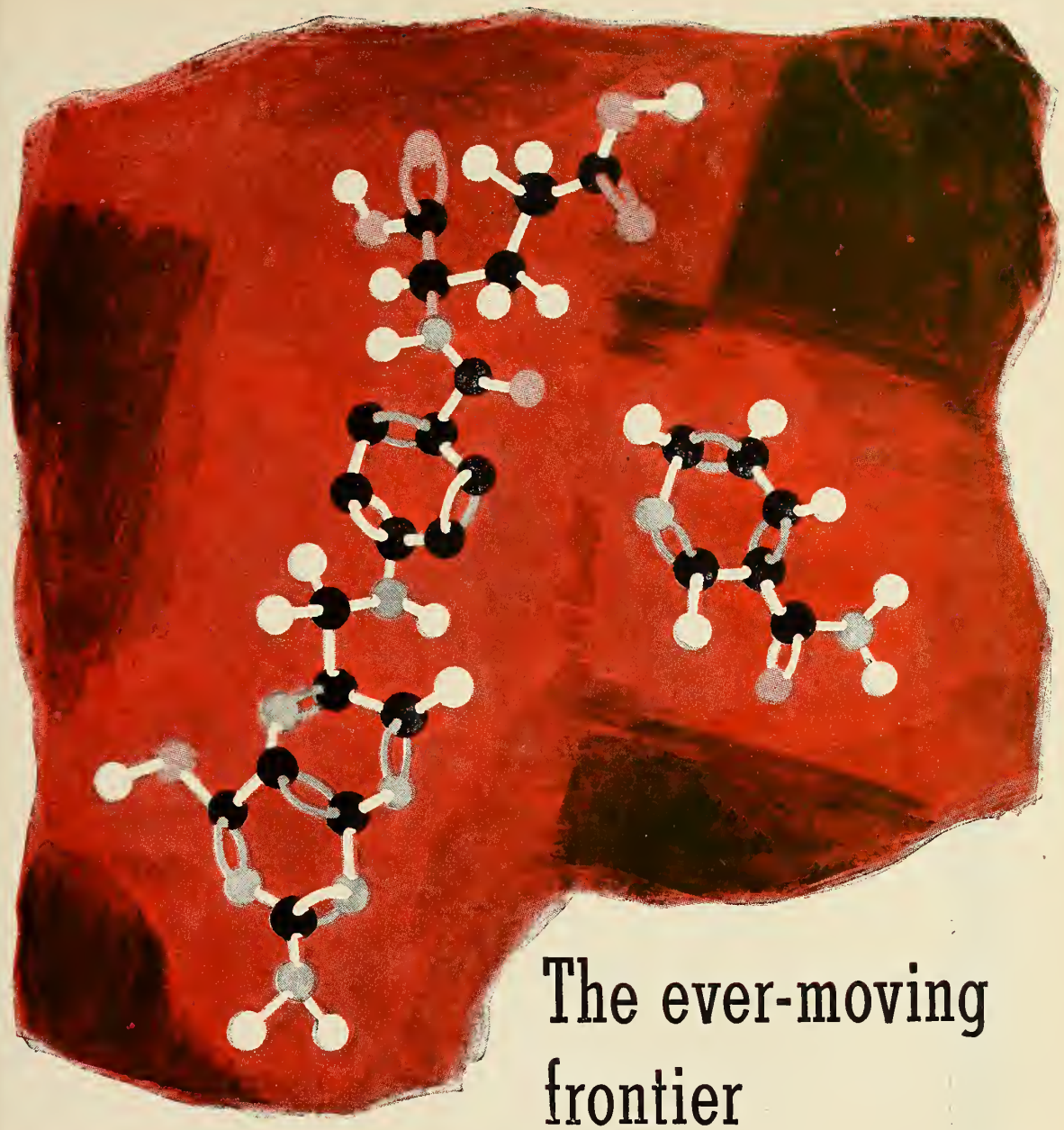
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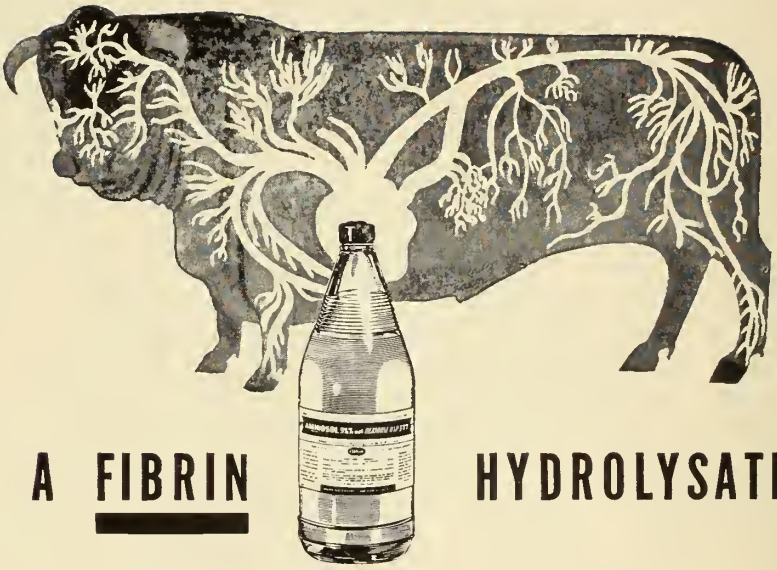


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1. Christensen, H. N., Lynch, E. L., Decker, D. G., and Powers, J. H. (1947), The Conjugoted, Non-Protein, Amino Acids of Plosma. IV. A Difference in the Utilization of the Peptides of Hydrolysates of Fibrin and Casein, J. Clin. Invest., 26:849, September.

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PROPOSALS FOR THE EXTENSION OF MEDICAL CARE

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THIS is indeed a tempestuous time in American medical history. There is an increasing tendency in governmental philosophy toward a series of platforms constructed under the various sociologic, educational and medical services which the government has sponsored. We must study the means by which such benefits are to be provided. We must evaluate their effect upon individual liberties with a careful consideration as to whether obvious advantages are outweighed by a deterioration of services and find whether an undue burden is placed upon those at whose expense such services are to be provided. The gradual transition which has been going on toward a solution of many glaring faults in medical service, as it is now provided, has been snowballed into an urgent problem by the unexpected Democratic victory last year.

Most of us physicians are so overwhelmed by the more pressing needs of "keeping up" in our knowledge and practice of the scientific aspects of medicine that we scarcely have an opportunity to review its sociologic aspects. It was because of this lack of information on the part of the average physician and his dilemma at the widely divergent views being forced upon him that this program was arranged.

As a necessary prerequisite to an evaluation of whether we do, or do not, need any radical change in the manner in which medicine is practiced in this country, one must first evaluate the status of our nation's health. There are widely divergent opinions with respect to this problem.

On one side of the question we have the findings of Oscar R. Ewing, the Federal Security Administrator, who has stated that "during the last generation, the United States steadily improved its health record, but the Nation, and the people, still suffer severe losses through sickness, disability, and death, much of which is unnecessary. Every year, 325,000 people die whom we have the knowledge and the skill to save. Every year, the Nation loses 4,300,000 man-years of work through bad health. Every year, the Nation loses $27,000,000,000 in national wealth through sickness, and partial and total disability. The record of Selective Service examinations during the war is widely known—5,000,000 men declared unfit physically or mentally for the armed services of their country." It is primarily on these conclusions that Mr. Ewing bases his opinion that there needs to be a thorough change in the manner in which medicine is practiced in this country.

On the other side of the question we have a report made by the Brookings Institution, a non-medical organization. This report was requested in May, 1947, by Senator H. Alexander Smith, of New Jersey. In February, 1948, the report was ready for publication.

The Brookings Institution's conclusions, in brief, are these:

1. Probably no great nation in the world has among its white population better health than prevails in the United States.

2. It is apparent that the United States under its voluntary system of medical care has made greater progress in the application of medical and sanitary science than any other country.

Dr. Carryer is secretary of the Olmsted-Houston-Fillmore-Dodge County Medical Society.

3. The non-whites in the United States have materially poorer health than the whites, but the evidence does not indicate that this condition is primarily or even mainly due to inadequacy of medical care.

4. The advances in health among both the whites and non-whites that have been made in the United States in the past four decades do not suggest basic defects in the American system.

5. Although the so-called draft statistics have been widely used to show bad health among American people, they are unreliable as a measure of the health of the nation.

6. Present medical care in the United States compares favorably with that which existed in other leading nations prior to the second World War.

7. The conditions in extremely poor rural areas cannot be solved by subsidies only

8. The United States has some individuals and families not possessed of the resources to enable them to pay for adequate medical care. In the future, as in the past, provision must be made for them through public funds or philanthropy.

9. Compulsory health insurance would necessitate a high degree of governmental regulation and control over the personnel and the agencies engaged in providing medical care.

10. The problem of eliminating politics from government administration is extremely difficult. It does not seem probable that politics could be eliminated from medical care supplied under a governmental system.

11. Compulsory insurance would inject the government into the relationship between practitioner and patient.

12. The administration of compulsory insurance would require thousands of government employes for accounting, auditing, inspection and investigation.

13. The cost of medical care presumably would increase because of administrative expenses, the tendency of insured persons to make unnecessary and often unreasonable demands upon the medical care services and the tendency of some practitioners and agencies to take advantage of the system for their own financial advantage.

14. The adoption of compulsory insurance would not immediately make available adequate service for all, because there are not at present the facilities nor a sufficient number of trained and experienced physicians, dentists and nurses to meet the demand which would result from compulsory insurance.

15. It seems questionable whether a country which once embarks on compulsory insurance can turn back. If such a program is once inaugurated, attempts must be made to remedy defects by more complete government control and administration.

It was the opinion of the Brookings Institution that most consumer units have the capacity to pay for medical care by voluntary prepayment medical care insurance if they would give it a high priority with preference over expenditures for automobiles, alcoholic liquors, tobacco, recreation and savings.

The widespread use of draft statistics as a means of portraying a deplorable situation in the health of man in this country has been widely criticized by Dr. Maurice Friedman, formerly of the University of Pennsylvania Medical School. He has pointed out that nearly two-thirds of the rejections were because of health conditions beyond the power of the medical profession to prevent or correct, regardless of the amount of medical service available and regardless of the cost of medical care. Only 20 per cent of the total rejections could have been influenced by medical care.

Because of the controversial nature of the Ewing report I should like to return once more to the details contained in it. In Ewing's conclusions regarding key health problems, he first stated that medical man power is insufficient and poorly distributed. In his opinion we have only 80 per cent as many physicians as we need and even greater shortages of other medical personnel; however, we do not have enough medical colleges, training schools and teaching hospitals to close the gaps between need and supply at any time in the foreseeable future. Secondly, our hospitals and other such facilities have not kept pace with our needs; we have only 50 per cent as many acceptable hospital beds as we require. Third, the Nation's health resources are not used to full efficiency; public and private services alike have for the most part grown up without effective planning. Fourth, our search for new knowledge about man and his human needs is feeble compared with our search for knowledge that will contribute to material wealth. According to Ewing, little more than 10 per cent of the more than $1,000,000,000 spent annually for research goes for medical and related sciences. Fifth, perhaps the basic lack of our entire health effort is the absence of any method which would permit the individual, regardless of his level of personal income, to obtain the kind of services he needs to achieve better health. Ewing stated that a scant 20 per cent of our people are able to afford all the medical care they need.

With these considerations in mind, Ewing has outlined a program which he sponsors. First, regarding medical manpower, he advocated increasing sharply our total production of manpower through training programs and financial and other

support, to expand medical colleges and to establish new ones until by 1960 our annual production of medical power in all categories has been increased by 40 to 50 per cent. This by 1960 should produce 227,000 active physicians (the present supply being 190,000), 95,000 dentists, (we have 75,000 now), 443,000 nurses (at present we have 318,000), and other supporting personnel by comparable amounts.

Second, regarding hospitals, Ewing recommended doubling the number of acceptable hospital beds as rapidly as possible, certainly within fifteen years, and at the least by 1960 adding 600,000 beds to our hospitals, and building such additional health centers and auxiliary facilities as surveys have shown to be necessary throughout our country.

Third, regarding local organization, "The states and communities themselves ultimately will set their own multiple goals for carrying out their parts of the program for better health." In Ewing's opinion we should attempt to provide federal assistance in establishing and maintaining adequate medical health units everywhere and in increasing and improving the training of public health workers to the end that their number shall be doubled.

Fourth, regarding individual costs, Ewing recommended that we should "provide that all people shall have access to such health and medical services as they require through a system of insurance covering the entire population." Because of the inability of millions of people to meet the costs of health services, Ewing stated that he is compelled to urge as strongly as possible that Congress enact, as President Truman has recommended, a system of government prepayment health insurance in the terms in which it has been mapped out. He pointed out that no agreement was reached at the National Health Assembly with respect to the national health insurance plan and that hence his recommendation is not based upon the action of the assembly.*

Fifth, regarding research, Ewing stated that we should increase our investment in medical and related research as rapidly as scientists can be trained, until the total national research is adequate to keep pace with our expanding needs. By 1960, federal nonmilitary research expenditure should reach a total of $80,000,000 to $100,000,000 annually if enough qualified scientists are available.

Sixth, Mr. Ewing pointed out the goals for certain special programs to focus attention on mental health as a leading area for medical progress in the last half of this century; to enable everyone in the nation to enjoy a happy, active, productive maturity by controlling chronic diseases and by relieving other physical and mental problems of adult life; to provide rehabilitation services for the 250,000 men and women who become disabled through illness or injury every year and to insure that every child in the country has the utmost degree of health. Accident prevention and sanitation ought to be stressed. The drive against venereal disease and tuberculosis should be pushed. The knowledge of nutrition should be broadened.

Ewing has estimated the government expenditures for his civilian health program in the year 1960 when such a program will have been completely active. He estimated the cost to be about $4,000,000,000. Ewing suggested that the money which will be expended in his health program will be derived from a 3 per cent and eventually 4 per cent annual earning tax on salaries up to $4,800 a year, probably to be divided between the subscriber and the employer.

The federal government may use general revenue to supplement the contributions as necessary in the amounts equivalent to a fixed maximal percentage of contributions.

Critics of the Ewing program have indicated a number of inadequacies, inconsistencies and statistical errors in his analysis. It has been pointed out that the National Health Assembly, which was called to consider the nation's health and the opinions of which Mr. Ewing's program is supposed to represent, was a "loaded" assembly. Many of those physicians who were members of it were selected from a small group which favors compulsory health insurance. It has been pointed out that only three months elapsed between the time the report was authorized and the time it was presented to the President. It is obvious therefore that the report had been largely prepared by Ewing before the National Health Assembly gathered to consider the problem at hand. The report has been widely criticized because of its statement that 325,000 persons per year die unnecessarily. This figure includes 150,000 deaths attributable to cancer or to heart disease and

*The medical care section of the National Health Assembly recommended voluntary prepayment group health plans as being the best available means at the time of bringing about improved distribution of medical care, particularly in rural areas.

40,000 deaths attributable to accidents. It is unlikely that medical care would have materially affected these conditions. Other figures have been derived from tuberculosis death rates, noting differences between states but without proper evaluation of factors other than medical care which may have contributed to the differences.

It would take approximately 1,000,000 nonprofessional employes to develop the system which has been suggested by Mr. Ewing. There would be a three-year tuning-up period of vast expenditure without any medical service being provided. It has been pointed out that Mr. Ewing's estimates of the cost ($4,000,000,000) are far less than the actual amount will probably represent. Estimates as high as $10,000,000,000 to $14,000,000,000 yearly are considered by some to be closer to the actual cost.

Dr. Walter Judd, Congressman from Minnesota, recently called attention to the probable costs of socialized medicine if it is introduced. He cited experience in other countries where the program has been tried and where it has cost approximately $240 per person each year. He pointed out that an individual could receive the same benefits through private medical care and hospital insurance programs for approximately $60 annually.

Critics of Mr. Ewing's plan have pointed out that the medical histories of a physician may be examined, thereby destroying a certain phase of the patient-physician relationship. His criticism of the adequacy of medical care has been attacked. While the wealthy had 20 per cent more house calls and office visits than the poor, there is no difference in hospital services given to the wealthy and the poor.

Ewing has stated that only 7,000,000 people in the United States live in communities meeting minimal standards set up for public health services. If New York City (population more than 7,000,000) has adequate public health measures, the rest of the country is in bad shape.

While draft statistics have been proved to be of little value, Ewing and his co-workers persist in using them to sell their plan.

It would be amiss in a discussion of this sort if we were not to consider S-5, the new version of the Wagner-Murray-Dingell Bill. In each session of Congress for the past decade these men have introduced some measure to provide for compulsory health insurance. Each of the series of bills provides that compulsory health insurance shall be administered by a national health insurance board of five men, one of whom shall be a doctor of medicine. The Surgeon General of the Public Health Service and the Commissioner for Social Security are members ex officio. The act reads that "All functions of the Board shall be administered by the Board under the direction and supervision of the Federal Security Administrator." There is likewise to be a medical advisory council of sixteen members appointed by the Federal Security Administrator, six members of which shall be selected from the various medical professions. The benefits of the Wagner-Murray-Dingell Bill provide that all self-employed people and practically all wage and salary earners, including federal government employes, are eligible for benefits consisting of medical services, dental services, home nursing services, hospital services and auxiliary services. The bill provides that payment to physicians, dentists, nurses, technicians and hospitals will be through designated local agencies with funds collected by the federal government and allocated by the National Health Insurance Board. No provisions are made in the bill for the necessary tax to provide the funds. The bill was submitted on the assumption that a special tax measure would be introduced in the House of Representatives embodying payroll tax deductions and methods of payment by the self-employed. In this manner an annual fund would be collected to be administered and dispensed by the board under the direction and supervision of the Federal Security Administrator. In this bill provisions are made for expanding public health services and federal subsidy for hospital construction.

Throughout the country there has been a great deal of criticism directed against the provisions as outlined in the Wagner-Murray-Dingell Bill. It has been pointed out that countries do not socialize medicine in a vacuum but work for the socialization of the entire economy, as they are doing in Great Britain. High-sounding purposes stated in the preamble are widely publicized rather than the means of effecting them, and it is generally conceded by students of the problem that the bill as it has been introduced will not carry out the objectives as stated in the preamble. As the bill is written, every physician after the enactment of the law will be held responsible, not solely to his patient as he is at present, but jointly to the state

and to the patient, the state presumably having precedence over the patient in this regard. Under the provisions of the Wagner-Murray-Dingell Bill, a patient normally may consult a specialist only with the permission of the government insurance physician. Of course, if he could not get permission of his physician, he could appeal to the government referee or as he is called "the administrative medical officer." That is the government official to whom the patients and physicians would be referred if they were dissatisfied with anything. Such officers would be charged with the responsibility for policing the health insurance system. Under the Wagner-Murray-Dingell Bill, there would be no recourse within the benefit of the bill for a patient when the government physician would say, "You may not go to a specialist." The cost of administering the bill would be prohibitive.

Another stated objective of the Wagner-Murray-Dingell Bill is the patient's freedom of choice of physicians. There would be only a partial freedom, however, under a capitation system. The representatives of the two leading nongovernmental lobbies sponsoring compulsory health insurance, Michael M. Davis, of the Committee for the Nation's Health, and Ernst P. Boas, of the Physicians Forum, have both conceded that the "fee for service" basis of payments will have to be abandoned and the capitation system used under national compulsory sickness insurance. There are a number of deficiencies in the capitation system. One is that patients who fail to choose a physician have to be assigned, since the physician's income is dependent on the number of patients on his list. What is to be done if a certain number of patients say that they are not going to get on any physician's list? The Wagner-Murray-Dingell Bill says that after a certain period, people would be notified that they would be assigned, and they would be assigned to the list of some physician. Under the capitation system, patients are worth so much per head per year to the physician on whose list they appear.

In the Wagner-Murray-Dingell Bill power would be centralized solely in Washington and solely in the hands of the Federal Security Administrator.

Other legislation which has been considered by Congress is more constructive. The Hill-Burton hospital bill which became law in 1946 provides an appropriation of $3,000,000 for state-conducted surveys of need and $75,000,000 annually for a five-year period for the construction of hospitals and related facilities. Before any single project is approved, sufficient evidence must accompany the request to show that two-thirds of the total cost of construction is available from other than federal sources and that financial support is adequate for the maintenance and operation of the hospital or related facility after completion. Three months ago 540 applications had been approved. The American Medical Association has strongly supported the Hill-Burton hospital bill.

Although the American Medical Association has come in for a great deal of criticism in recent years and has been accused of failing to comprehend the sociologic changes which are taking place in our country, it is evident from its program, a résumé of which follows, that this criticism is not justified.†

PROGRAM OF THE AMERICAN MEDICAL ASSOCIATION FOR THE ADVANCEMENT OF MEDICINE AND PUBLIC HEALTH

A Federal Department of Health

1. Creation of a Federal Department of Health of Cabinet status with a Secretary who is a Doctor of Medicine, and the co-ordination and integration of all Federal health activities under this Department, except for the military activities of the medical services of the armed forces.

Medical Research

2. Promotion of medical research through a National Science Foundation with grants to private institutions which have facilities and personnel sufficient to carry on qualified research.

Voluntary Insurance

3. Further development and wider coverage by voluntary hospital and medical care plans to meet the costs of illness, with extension as rapidly as possible into rural areas. Aid through the states to the indigent and medically indigent by the utilization of voluntary hospital and medical care plans with local administration and local determination of needs.

Medical Care Authority with Consumer Representation

4. Establishment in each state of a medical care authority to receive and administer funds with proper representation of medical and consumer interest.

New Facilities

5. Encouragement of prompt development of diagnostic facilities, health centers and hospital services, locally originated, for rural and other areas in which the need can be shown and with local administration and

†This recently announced program is an extension of the program sponsored by the American Medical Association over the past two decades.

control as provided by the National Hospital Survey and Construction Act or by suitable private agencies.

Public Health

6. Establishment of local public health units and services and incorporation in health centers and local public health units of such services as communicable disease control, vital statistics, environmental sanitation, control of venereal diseases, maternal and child hygiene and public health laboratory services. Remuneration of health officials commensurate with their responsibility.

Mental Hygiene

7. The development of a program of mental hygiene with aid to mental hygiene clinics in suitable areas.

Health Education

8. Health education programs administered through suitable state and local health and medical agencies to inform the people of the available facilities and of their own responsibilities in health care.

Chronic Diseases and the Aged

9. Provision of facilities for care and rehabilitation of the aged and those with chronic disease and various other groups not covered by existing proposals.

Veterans' Medical Care

10. Integration of veterans' medical care and hospital facilities with other medical care and hospital programs and with the maintenance of high standards of medical care, including care of the veteran in his own community by a physician of his own choice.

Industrial Medicine

11. Greater emphasis on the program of industrial medicine, with increased safeguards against industrial hazards and prevention of accidents occurring on the highway, home and on the farm.

Medical Education and Personnel

12. Adequate support with funds free from political control, domination and regulation of the medical, dental and nursing schools and other institutions necessary for the training of specialized personnel required in the provision and distribution of medical care.

The American Medical Association considers it unfair to include in any draft legislation which may be enacted, clauses which would specifically affect physicians. It is attempting to provide for the armed forces those medical officers which they will require. Recently it sent letters to 7,600 physicians under the age of twenty-six years, to which they had received 750 replies. Four hundred fifty physicians asked for a commission in one of the armed forces.

A certain amount of opposition to compulsory health insurance has come about through the efforts of physicians. However, many nonmedical organizations have voiced opposition to such a plan.

In October, 1948, the American Legion adopted a resolution in which it was stated that that organization is "unalterably opposed to all efforts and movements to enforce socialized medicine upon the American people."

Recently the Farm Bureau Federation, a group including 1,325,000 families and the largest organization of its type in the country, telegraphed the Senate Labor and Public Welfare Committee an urgent appeal to defer action on compulsory health insurance.

Many labor leaders have been vociferous in their support of a program of compulsory health insurance. However, there is no record that the rank and file of union members have ever voted on the subject; in fact, there is no reason to believe that the average worker, if he has heard of the proposed health program, has more than the haziest idea of its provisions or its costs. Likewise lined up against the passage of a compulsory health insurance law, one may find the dentists, the insurance companies and probably the bulk of businessmen dependent upon free enterprise.

There is consternation among those who are defending the present system of medicine in America, regarding attempts on the parts of federal employes to influence legislation and the use of federal appropriations for this purpose. Such expenditures are illegal. However, on November 19, 1945, the Surgeon General of the United States Public Health Service sent a directive to others in his organization in which he stated: "The appropriate executive agencies of the government have been specifically instructed by the President to assist in carrying out this legislative program [referring to the health program] as presented to Congress on September 6, 1945." He continued: "Every officer of the public health service will wish to familiarize himself with the President's message and will be guided by its provisions when making any public statement likely to be interpreted as representing the official views of the Public Health Service."

Representative Forrest A. Harness, the chairman of the publicity and propaganda subcommittee of the House of Representatives, conducted an investigation of the so-called health workshops which have been widely sponsored and participated in by members of various federal organizations. These "health workshops" are designed to mobilize pressure groups in behalf of socialized medicine. Congressman Harness has shown that six

federal departments, bureaus and agencies have been known to participate in these workshops.

I should like to speak briefly on the current Washington scene in Congress which has recently convened. Up to this time more than fifty measures in the medical field have already been introduced. These deal with a number of diseases and subjects such as arthritis, leprosy, epilepsy, multiple sclerosis, bills to provide federal loans to medical students, and a number of other related measures. The bill "S-5" which has been introduced is the new edition of the Murray-Wagner-Dingell Bill. This bill is to be considered in the Senate by the very important Labor and Public Welfare Committee. At present this committee is well occupied with its consideration of the Taft-Hartley law. It is probable, however, that within the next few weeks they will get around to considering the new version of the Murray-Wagner-Dingell Bill.

Several members of the Senate Labor and Public Welfare Committee have expressed their interest in a measure suggested by Gilson Engle, president of the Medical Society of the State of Pennsylvania. In essence the Engle plan provides for the federal support of students in the medical sciences and of their institutions. It provides for more funds and greater authority than the Hill-Burton hospital construction law. It provides for federalization of the Blue Shield and Blue Cross only where "medically indigent" are concerned; it provides for the establishment of a health department with a physician secretary in the president's cabinet in addition to abolition of politics from appointments to Federal Public Health positions.

Capital hill sentiment is mounting for Engle's kind of approach to the solution of our medical problems in lieu of the S-5 bill as it now exists. The twelve-point plan of the American Medical Association is similar to the Engle plan.

Inasmuch as the program of the American Medical Association is being primarily directed at providing voluntary prepayment medical plans as a more desirable type of medical care than that to be derived under compulsory insurance programs, it is appropriate that we discuss the progress being made by these organizations in the United States. To date there are sixty-six plans for prepayment of medical care which have met with the standards of acceptance as outlined by the Council on Medical Service of the American Medical Association. These plans are scattered through forty-two states and the District of Columbia. The remaining states are at this time working on medical prepayment plans which in the course of time will be introduced. Opinion Research Corporation in September, 1948, estimated that 47 per cent of the public is covered by some form of private medical or sickness insurance. In addition to this type of insurance there are a number of commercial insurance companies writing an indemnity type of policy.

In any discussion of proposed socialized medicine, it is well to consider the experience of other countries which have had similar problems and countries which have tried various forms of compulsory health insurance. Of particular interest is the experience of New Zealand.** With the introduction of socialized medicine in 1939 the government compelled everybody in New Zealand to come within its scope and the payment for this stupendous undertaking was provided for by means of direct taxation. Five and one-half cents out of every dollar gross income or salary is collected as a special tax. This amount only partly covers the cost of administration of social security; in addition the fund must be subsidized from the consolidated fund of the government. Approximately a fourth of the government income in New Zealand is expended on social security programs; this equals $60 per head of population. According to the statute which was enacted in New Zealand, every person is entitled "without cost" to himself to such medical attention as is ordinarily given by medical practitioners in the course of general practice. Pharmaceutical benefits are provided "free of any cost to the patient." State hospital benefits are provided "free of cost to the patient." Private hospital charges are subsidized up to $2 per day. The private practitioner's fees are regarded as full settlement of his claim. In the case of specialists, additional fees over and above basic allowances must be recovered from the patient.

The chiropractors are now making representation to be included in this plan.

When a patient in New Zealand visits his medical practitioner "without cost to himself," at the conclusion of his consultation he signs a form;

**This information was obtained from an address given in the United States last year by Dr. A. Lexington Jones, Christchurch, New Zealand.

that form is signed by the physician and directed to the health department for whatever sum is involved. The form is a simple one. The physician's name, the number of visits the patient has made and the total cost appears on it. The claim is signed by the physician and paid without question. The patient is free to visit the physician as many times a day as he wishes, he may visit as many physicians as he wishes, and he may obtain from each physician a prescription which he may have filled "without cost" to himself. He may be signed over to any one of the subsidiary benefits for pension, admission to a hospital, massage, roentgenologic examination and so forth. He may indulge in this pastime among the physicians to his heart's content or until he finally interviews the physician who will do as he bids, give him the medicine he desires and put him in the institution of his choice and place him on the advantageous pension list. He may do all this "without cost" to himself, the one and only condition being that he must be prepared to wait, sick or well, in line among a queue of people on similar business.

A great part of the money which those in New Zealand are taxed is absorbed in the cost of administration, in payment to a large body of civil servants, to physicians for visits that were never necessary and for prescriptions which were given to patients who did not need them. The medical profession has so many consultations that it is impossible for physicians to devote the necessary time to each patient, evaluate his symptoms and give a careful and considered diagnosis.

This system has lowered the status of the medical profession and has lowered its prestige, owing to the known abuses that may be practiced by unscrupulous members. There is no competent check made of medical claims.

It is too early to judge the progress being made under socialized medicine in England. The present all-inclusive program has been in effect less than a year, and reports vary with the philosophy of the reporter. However, physicians agree that there are so many forms to be filled out that it is inconceivable that a British physician can carry on a competent practice without the services of someone to perform his paper work for him. The money provided for a year of the program was exhausted in four months.

In an article in the current issue of the *New England Journal of Medicine,* Dr. William Sweet of the Massachusetts General Hospital reported his observations on socialized medicine in England. He has recently returned from England, where he spent several months working in a medical center.

He has indicated that a British practitioner must see at least fifty patients a day if he has the average panel of 2,000 persons, or at least 100 patients a day if his panel is the maximum of 4,000 allowed. Patients with minor complaints, though they recognize the trivial nature of their complaints, now present themselves. The availability of free conversation with a physician and free medicine is multiplying the number of psychoneurotic and hypochondriac patients who appear.

The labor government requires that a worker absent from his job must present a valid excuse. A note from a physician is desirable. The patient's word must be accepted by the physician, or on subsequent illnesses the patient will call on the physician to make a house call to substantiate his claim.

Many patients wishing to circumvent regulations such as food rationing, restrictions on heat, domestic equipment, transportation and so forth —even the purchase of a hot-water bottle—must possess a government permit, one avenue to which is a physician's certificate of medical need.

Routine laboratory examinations are difficult for the physician, especially the general practitioner, to get. They must be secured through the already swamped clinico-pathologic and roentgenologic departments of hospitals. When much study is required on an interesting problem, the general practitioner has his ardor dampened by the necessity of referring his patient to a consultant.

Failure of a physician to answer an emergency call may not only lose for him the patient but make him liable to serious disciplinary action by the "general medical council" or other appropriate agency.

A physician may order a prosthesis or brace but he may not specify the firm making the appliance. This policy is at present eliminating from the field one firm widely regarded as the best British maker of artificial limbs but which is no favorite of the labor government.

The current waiting list before admission to the hospital of a patient with a presumed brain

tumor is about three months. A request for special neurosurgical instruments to be used in a new neurosurgical procedure was politely denied —eight months later.

The crucial feature of England's difficulty lies in the fact that the responsibility for being healthy has shifted from the patient to the physician.

Dr. A. M. Snell recently had the opportunity to spend a few weeks in England. His was an excellent opportunity to study the workings of English socialized medicine. He has indicated that neither the profession nor the hospitals were yet ready for the scheme. More hospitals and diagnostic centers are urgently needed. Medical personnel will be difficult to obtain since the practice of medicine is not particularly attractive at this moment. There is too much bureaucratic interference. There are delays in all fields, notably supplies. The professional invalid is in his element, as is the compensation seeker. The middle-class groups are unhappy since they cannot afford to pay the tax and have the physicians of their choice, too; they dislike dispensaries. The general practice of medicine is deteriorating into a semi-clerical job, unattractive to any capable man.

The plight of the general practitioner was satirized by the following poem, which appeared in the issue of the *Lancet* for January 22, 1949.

CHAUCER: 1949 MODEL

(*London Lancet,* January 22, 1949, p. 161)

A practisour there was with penne in fyste,
He had four thousand pacions on his lyste
And doctored them right spedely; to each
He gave two minutes, cutting short their speche,
Writing them scripte in Latin most impure.
He had a verray pretty signature
Which none coude rede, but noöne ever tryed.
He had a motor carre in which to ryde
And eke a bagge to hold his stock-in-trade
—Divers certificates of every shade—
These he dispensed with a lavish grace,
Writing the details in the appropriate place.
With these and him his pacions were content.
He had no neede for any instrument.
He took no trouble, but he gave none
So he stood high with high-ups everyone,
Small wonder all came floccynge to his door
He was a parfit general practisour.

Regarding what has happened in Germany, perhaps you have read the article entitled "Nazi Medical Crimes" which was published in a recent issue of the *Journal of the American Medical Association.* This article was written by Dr. A. C. Ivy, whom many of you know. Dr. Ivy stated: "Soon after the Nazis assumed power, they took over the control of the organized medical profession. This control gradually became more and more severe; it was not long before free scientific discussion and criticism was suppressed and scientific medical meetings became infrequent and were poorly attended. Contrary to the precepts of medical ethics, a student had to be or to have been a member of the Hitler Youth Movement. A medical graduate could not obtain an internship unless he was a party member."

In conclusion, one might summarize the feelings of most physicians as they were expressed so well in the recent issue of the *New England Journal of Medicine,* in an editorial entitled "Fish or Cut Bait."

The American medical profession must realize that it is functioning in a world in social revolution, and that slow evolutionary processes of change are not adequate to bring it up to the times and keep it abreast of them. It must understand that the only apparent alternative to such a remodeling of its methods is capture and eventual domination by other forces, that, lofty as their motives may be, have yet but a limited understanding of the traditions, the ideals and the techniques that they seek to control. The profession of medicine must, and must now, become fully awake to its responsibilities, to the dangers which threaten it and to its own strength. It must make up in a few brief months for years lost in the cultivation of its public relations. It must teach a forgetful public what that public owes to it. It must acknowledge openly what it owes to the public and present its plan of payment. It must acknowledge its inertia, its blunders and its former indifference to public opinion. It must show its receptiveness to new ideas, its ability to discuss the common problems with all agencies that are honestly seeking the same goal of service.

There is today one vital consideration for physicians to remember: they must work in harmony, if they are to achieve through their own initiative those things that others believe can be achieved better by methods of compulsion.

ANALYSIS OF ELECTROCARDIOGRAMS OF NINETY-THREE PATIENTS WITH ACUTE RHEUMATIC FEVER

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IN THE course of reading electrocardiograms at the Lowry Field Station Hospital, the majority of which were taken on male patients with acute rheumatic fever, several questions arose, the answers to which were not readily available either in the standard texts on electrocardiography or in the current literature. It was observed that (1) a significant number of these patients showed normal electrocardiograms throughout their illness, although they undisputedly had acute rheumatic fever, and (2) many changes were present in the electrocardiograms of these patients other than the prolonged PR interval. T wave changes were frequently seen, especially in the CF_4 position, as well as many other nonspecific evidences of myocardial involvement. Because we were unable to find any recent tabulation of their expected frequency of occurrence, it was felt that a study of the electrocardiograms of a series of patients with acute rheumatic fever would be informative.

For subjects, ninety-three patients with acute rheumatic fever were selected from the records of the Lowry Field Station Hospital, Denver, Colorado, over the period from 1942 to 1946. The charts of all the patients in this series were carefully reviewed in order to establish the diagnosis with as much certainty as possible. Whenever insufficient data were available to make an absolute diagnosis, the chart was rejected. This will be discussed later as a possible source of error in the calculation of the percentage of patients who show electrocardiographic abnormalities.

T. D. Jones' "Diagnosis of Rheumatic Fever"[8] was used as our criterion of diagnosis in selecting the patients to be included in this series.

Complications of acute rheumatic fever, i.e., pericarditis, were cause for exclusion from the series.

The patients all had an electrocardiogram taken on admission to the hospital and at regular intervals thereafter. During the last six months our procedure was to obtain weekly electrocardiographic tracings on all patients under observation for rheumatic fever. During the acute episode an attempt was made to follow each patient even more closely, obtaining daily tracings if necessary. This was especially true if the original tracings showed borderline changes or were normal.

The standard limb leads and the standard apical lead (CF_4) were taken on all of the patients, with the patients in the supine position.

Normal Values Used in Interpretation of Electrocardiograms

Because of the wide divergence of opinion found existing among the various authorities as to both the selection of the limits of normal allowed in the interpretation of electrocardiograms and the amount of significance which should be attached to certain variations from the normal, it is felt that any paper discussing electrocardiographic analysis should be prefaced by a definition of the normal values used by the authors. In general, we tended to be very liberal in our interpretations, using the widest acceptable limits of normalcy as our reference points. At the same time, we regarded all tracings in which the contour and measurements approached the upper limits of normal with suspicion, and these patients were carefully studied both clinically and with serial tracings to further evaluate the cardiac status. In this manner an attempt was made to determine the true significance of the borderline changes in the original electrocardiogram.

Our normal values are listed in detail below.

Rate.—Rates between 60 and 100 beats per minute were considered to be normal. Rates below and above this were considered to be bradycardia and tachycardia, respectively.

Rhythm.—Arrhythmias were diagnosed according to standard criteria.[5,9,10,22]

PR Interval.—A PR interval of .22 seconds was considered to be the upper limit of normal for any single tracing. However, we considered a PR interval of the same duration to be indicative of first-degree heart block if previous or subse-

quent tracings on that patient showed a significantly shorter PR interval.

As an arbitrary figure denoting the division between the normal and the abnormal, .22 seconds agrees roughly with the findings of Stewart and Manning[7,17] and of Graybiel et al.[6] Stewart and Manning find that in the second limb lead a PR interval greater than .21 seconds falls two standard deviations from their mean. They consider this to be of significance, as only 2.5 per cent of normals will fall above this limit. They further state that a PR interval greater than .24 seconds is of great significance, as this falls three standard deviations from their mean. The probability of a normal individual exceeding this is only 0.15 per cent.

Graybiel et al find that in their series of 1,000 normal young aviators, 915 had PR intervals between .12 and .18 seconds and only twelve were of .22 seconds or greater.

This further indicates the often emphasized fact that there are no sharp dividing lines in physiological measurements. All that can be done is to regard an electrocardiographic tracing with progressively more suspicion as it approaches the limits of normal and to attempt to assess its true meaning by further study.

The lower limits of normal were taken to be .10 seconds.

P Waves.—P waves were evaluated according to the criteria listed in standard texts. We were unable to fasten much diagnostic value to the P waves in acute rheumatic fever. Because of the wide variations in contour of the P waves within the normal limits, it was felt that minimal changes were of little significance.

QRS Complex.—We considered .12 seconds to be the upper limit of normal for the duration of the QRS complex in both the limb leads and in the precordial lead. Here again, it is impossible to arbitrarily select any single value as representative of the dividing line between the normal and the abnormal.[6,7,16,17,21] Stewart and Manning[17] found that values in excess of .10 seconds were two standard deviations from their mean, and that values in excess of .12 seconds were three standard deviations from their mean. Graybiel et al found that in their series thirty-eight of 1,000 normals exceeded .10 seconds and that three of 1,000 normals exceeded .12 seconds.[6]

No significance was attached to notching and slurring of the limbs of the QRS complex in the absence of prolonged intraventricular conduction time.

Low voltage was considered to be present in the limb leads only if all of the QRS complexes were less than 5 mm. in height. Low voltage was considered to be present in the precordial lead if the P wave was less than 2 mm. in height.

ST Junction.—(A) Limb leads: An elevation of the ST junction in excess of 1 mm. or a depression in excess of .5 mm. was considered to be abnormal.

(B) Precordial lead: An elevation in excess of 2 mm. or a depression in excess of .25 mm. was considered to be abnormal.

T Waves.— (A) Limb leads: (1) Leads I and II. T waves were required to be positive and of 1 mm. or more in height to be considered normal. Flat, diphasic or inverted T waves were considered as definitely abnormal. (2) Lead III. The T wave in lead III was considered to be of little diagnostic value since it appears normally in either positive, flat, diphasic, or negative form. Even changes in contour of the T_3 occurring in serial tracings were regarded with skepticism unless associated with other changes.

(B) Precordial lead: Diphasic or negative T_4's were considered to be abnormal.

Findings

Total Number of Patients.—Ninety-three males.

Age.—The ages varied from seventeen to forty-one years; 88 per cent were between eighteen and twenty-five years of age.

Past History of Rheumatic Fever.—Thirteen of the ninety-three patients (13.9 per cent) had a past history of rheumatic fever. Two additional patients had a history suggestive of rheumatic fever, but had never had a definite diagnosis made.

Total Number of Patients Who Showed Abnormalities of Any Kind in Their Electrocardiograms.—Of the ninety-three patients, sixty-three showed some abnormality in their electrocardiogram at some time during their hospital stay (67.7 per cent). This figure should be accepted only with the following reservation. Because of the method used in selecting patients, it was necessary to reject any chart which did not have listed the

necessary data to make a diagnosis. Therefore, we feel that we probably rejected an occasional chart of a patient who really had acute rheumatic fever but who did not have enough diagnostic criteria listed to enable us to confirm the diagnosis from his chart alone. This, of course, would make our percentage higher than the true percentage.

PR Interval.—Thirty-seven patients (39.7 per cent) showed abnormal delay in auriculoventricular conduction time. Of these, thirty-one exceeded .22 seconds. The remaining six were of .22 seconds duration. Multiple electrocardiograms of these borderline patients indicated that .22 seconds probably represented an early first-degree heart block for them. Three of these six patients also showed other electrocardiographic abnormalities as confirmatory evidence of cardiac involvement.

Sinus Tachycardia.—Thirty-one patients (33.3 per cent) showed rates in excess of 100 beats per minute. Although sinus tachycardia is of little diagnostic significance in itself, it is of interest to note that in Graybiel's series of 1,000 normal young adults, only three patients showed rates over 100.

Sinus Bradycardia.—Eighteen patients (19.3 per cent) had rates under sixty per minute.

Arrhythmias.—Sinus arrhythmia was not considered. Two patients showed the Wenkebach phenomenon (second-degree heart block), and one patient showed frequent nodal extrasystoles.

P Wave.—Only one patient showed definite P wave abnormality. In this patient the P wave of the second limb lead was coarsely notched and of .16 second duration.

QRS Complex.—(A) Limb leads: None of the patients showed abnormal prolongation of the QRS complex. None of the complexes exceeded .11 seconds. Four patients had low voltage of the QRS^{LL} (4.3 per cent). In none of these did the highest QRS complex exceed 4 mm.

(B) Precordial lead: None of the patients showed abnormal duration of QRS_4. Seven patients (7.5 per cent) showed an R_4 of less than 2 mm. in height. This is probably of some significance, since in a study of 100 normal young adults done by Aagaard and Skubi[1] only one patient showed an R_4 of less than 2 mm.

ST Junction.—(A) Limb leads: Eleven patients (11.8 per cent) showed an elevation of the ST junction over 1 mm. Three patients showed a depression greater than .5 mm.

(B) Precordial lead: Seven patients (7.5 per cent) showed elevation greater than 2 mm. One patient showed a depression in excess of .25 mm.

T Wave Changes.—Thirty-three patients (33.5 per cent) showed T wave abnormality in at least one lead. Twenty-one patients showed abnormality in the T waves of the limb leads. Eighteen patients showed abnormality in the T_4. (Some showed abnormality in both, hence the discrepancy in figures.)

There has been much discussion of the significance of the occurrence of an inverted or diphasic T_4 as an isolated electrocardiographic abnormality. It is true that it may be seen rarely in a patient in whom no apparent explanation can be found for the abnormality (two of Graybiel's 1,000 patients had a diphasic T_4), and that it may be seen somewhat more commonly due to various noncardiac factors in the absence of demonstrable cardiac disease (i.e., generalized toxemia, vasomotor instability, acute abdominal conditions, drugs, et cetera.)[16] However, we feel that it is of definite significance in patients whose history and clinical findings point towards cardiac disease being present. Levy and Bruenn[11] cite several cases in which the T_4 was the only abnormal variant in the tracing, and we have, also, found this to occur not infrequently. Noncardiac factors, of course, must be kept in mind and ruled out.

Another factor frequently mentioned in discussions of the significance of changes in the contour of the T_4 is that of malpositioning of the electrode. However, if one considers only inverted or disphasic T waves as abnormal, it would seem to rule out fairly well the possibility of malpositioning causing the abnormality, since the electrode would have to be placed almost in the CF_2 position to cause inversion in a normal adult subject.

The age of the patient is also a factor to be considered in evaluating the significance of T_4 changes. This is especially true in acute rheumatic fever.

In the present series, twelve of the patients (66.6 per cent) of the total showing T_4 abnormalities, showed other definite electrocardiographic

abnormalties along with the T wave changes. Of the remaining patients, three showed a single diphasic or inverted T_4 as the only abnormality. The remaining three showed one or two minor changes in addition to the T wave change. All of the T wave changes returned to normal while the patients were under observation.

Discussion

Cohn and Swift,[3] in 1924, studied the electrocardiogram of thirty-seven patients with acute rheumatic fever, and made the following observations: (1) auriculoventricular conduction time may be delayed; (2) abnormalities in the QRS complexes and in the T waves may occur; (3) arrhythmias are common. They concluded that these were transitory signs characteristic of cardiac involvement, although not necessarily specific for rheumatic fever. They felt that the changes they described merely expressed derangement of the heart, indicating that it had been affected by the rheumatic process.

Reid and Kenway,[15] in 1928, reported on the electrocardiograms of patients with acute rheumatic fever and confirmed the findings of Cohn and Swift. Several other reports were published at the same time.

One still cannot disagree with the conclusions drawn by these authors. The only point of criticism which can be leveled is that, in the light of present day studies on large numbers of normal subjects, the earlier authors probably defined their limits of normal too rigidly, thereby increasing their incidence of abnormal findings. It is interesting to note that Reid and Kenway reported 42.6 per cent of their patients to have PR intervals over .21, which agrees almost exactly with our findings. However, using the criterion that an increase in PR interval of .02 seconds or more from a previously established baseline indicates an abnormal delay in auriculoventricular conduction time, they report that 92.3 per cent of their patients exhibit such a delay.

None of the changes described is specific for rheumatic fever. Master and Jaffe[12] describe similar changes in other infectious diseases. Rantz, Spink, and Boisvert[14] describe these changes in the electrocardiogram as they occur following hemolytic streptococcus sore throat.

Of the sixty-two patients who showed abnormalities of any type in their electrocardiograms, twenty-six showed normal electrocardiograms the first time studied. Nine of these showed normal tracings the second time studied, and one had a normal electrocardiogram the first three times he was studied. In addition, ten patients showed changes of only questionable significance on the first tracing, whereas subsequent tracings revealed these changes to be early evidences of cardiac involvement. Only twenty-six patients, less than 50 per cent, showed definite abnormality on their first electrocardiogram. This speaks strongly in favor of following every patient suspected of havings acute rheumatic fever with frequent electrocardiograms during the acute phase of the disease.

It is of interest to note that the T wave changes occurred with as high a frequency in this series as did the PR interval changes. It is also of interest to note the many other electrocardiographic abnormalities that may occur in association with acute rheumatic fever.

One patient in our series deserves special mention. He was a twenty-year-old negro male who died on the twenty-seventh hospital day of acute heart failure. During the time he was under observation he had multiple electrocardiograms taken, all of which were completely normal save for a sinus tachycardia. Autopsy, however, showed evidence of extensive myocardial involvement. This indicates that the electrocardiogram is not as sensitive as we would like to have it in detecting minimal (or sometimes even gross) evidence of myocardial disease.

Summary

The electrocardiograms of ninety-three patients with acute rheumatic fever are analyzed and the variations from normal noted.

The relative frequency of occurrence of the abnormalities seen in this series is listed. Thirty-two per cent of the individuals studied showed no electrocardiographic abnormality during their entire illness. Of the remainder, T wave changes occurred with almost the same frequency as did prolongation of the PR interval.

Addendum

Since this paper was written, a similar report by Blackman and Hamilton appeared in the *Annals of Internal Medicine*.[2] Although they restricted their series to those patients having acute rheumatic fever for the first time, their incidence of PR interval changes agreed rather closely with

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SKELETAL TRACTION IN THE TREATMENT OF TRAUMATIC ANTERIOR THORACIC INSTABILITY

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THORACIC instability resulting from multiple rib fractures and/or costochondral separations is a well-recognized problem. The disturbance in the physiology of respiration is the real trouble, but it is so well understood in its essentials and so involved in its details that we merely mention it here en route to the following brief discussion of methods used to stablize the unstable thorax and of a case in point from the Fracture Service of the Minneapolis General Hospital.

Increasing the stability of the thoracic cage by taping heavily[1,5] or by supporting bilaterally with sandbags has allegedly helped at times but often, particularly in cases of marked anterior instability, has been inadequate. Towel clips[4] or barbless fishhooks used as instruments of suspension have been more helpful but, because of their sharp points, are more dangerous. Towel clips have the added disadvantage of being relatively dainty instruments, and both tend in too short time to pull out or cut out of the tissues. Jaslow[3] reported encouraging results from the use of one or two large, coarse-threaded closet hooks screwed into the anterior wall of the sternum. There have been suggestions that the Drinker respirator might be used to advantage;[2] but, while we have not had experience with the respirator in such cases, it seems that to bring about adequate respiratory exchange at the cost of irritating motion at the fracture sites, with the grinding together of fractured bone-ends and the possible penetration of pleurae and vessels by sharp bony spicules, is to make an unnecessarily poor bargain.

We write this paper to tell of our satisfactory experience with a blunt, wide-mouthed instrument capable of withstanding prolonged pull in the reestablishment of thoracic stability. It was simply our good fortune to have available such an instrument—a uterine tenaculum previously modified for use in exerting traction on the depressed zygomatic arch (Fig. 1)—when we fell heir to the following case:

A twenty-seven-year-old white woman was admitted to the Fracture Service of the Minneapolis General Hospital following an automobile accident.

Physical examination revealed an unconscious young woman with apparently severe injuries. Blood pressure was 90/45, pulse 88, respirations 22. Her clothing was heavily blood-stained from a large scalp laceration and multiple face lacerations. The central portion of the anterior chest wall was depressed, and multiple rib fractures and/or costochondral separations were palpable bilaterally. Breathing was labored, and on inspiration the sternal segment was noted to retract. A bedside chest roentgenogram showed fractures of the second, fourth, sixth, and eighth ribs on the left, and of the eighth and seventh and probably the sixth on the right. But these were all posterior to the anterior axillary lines so a great part of the sternal instability seemed due to the costochondral junction disruptions. The chest was full of sibilant and sonorous râles, but breath sounds were heard throughout both lung fields and the chest roentgenograms showed no pneumothorax. The abdomen exhibited generalized voluntary muscle spasm but was otherwise negative. The spine and pelvis were intact. The left lower limb was in a half-ring Thomas traction splint and revealed a hematoma anteriorly near the junction of the middle and lower thirds of the leg. A very small scratch in the skin was noted in that area, but no bony points projected through the skin or immediately underlay the scratch.

She presented the shock triad of ashen cyanosis, cold clammy skin and rapid thready pulse. When she reached the ward, she was immediately placed in a steep Trendelenburg position and two units of plasma were started intravenous simultaneously, one in each antecubital vein. A third unit of plasma and 1,000 c.c. of normal saline solution were added as needed, and oxygen per BLB mask was begun. Her wounds were thoroughly cleansed with green soap and water, and sulfa powder was applied; a careful examination of the wound near the left tibial fracture showed it to be only a shallow laceration. Combined tetanus and gas-gangrene antitoxins were given and penicillin was begun. Five hours after admission she was given 500 c.c. of whole blood. After the blood pressure had become relatively stable at a satisfactory level, the wounds of the face and scalp were sutured, and skeletal traction in a Stimson splint was placed on the left lower limb through a Kirschner wire in the os calcis.

But as time went on, the most serious problem became increasingly apparent: how to stablize the essentially free sternal segment in order to provide an efficient respiratory mechanism. Respirations had become more labored and sternal retraction with each inspiration had become more marked. We taped the chest heavily but to litle or no avail. We packed sand-bags along each side of the chest, but her respiratory embarrassment continued. The Drinker respirator was considered but was decided against. Finally we decided to suspend the ster-

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nal segment. We inserted a large barbless fishhook around the inferior border of the costo-xiphoid angle and attached to it about 8 pounds of traction through an overhead block system. The idea was all right but the flesh was literally weak; the hook pulled loose. So the search began for an instrument that could grasp the sternum and hold it firmly. Only a large modified uterine tenaculum seemed adequate; in use it proved most satisfactory. In the accompanying photograph it is apparent that the jaws are somewhat blunted and approach each other at a wide angle. Each of these characteristics is important: the rounded points lessen the danger to the pleurae and the internal mammary vessels as the instrument is introduced, and the wide angle makes a firm grasp possible.

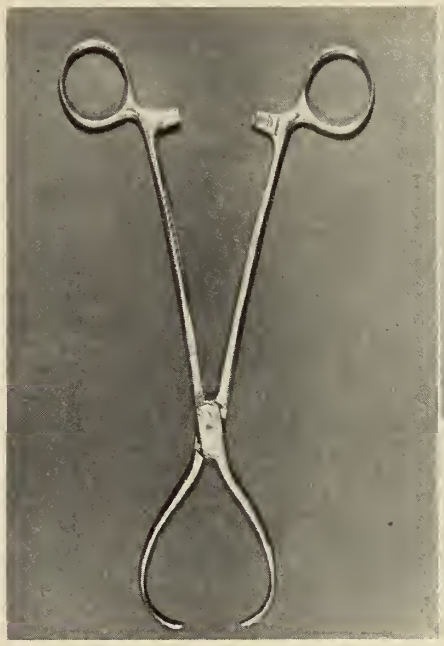


Fig. 1. Uterine tenaculum modified for use in exerting traction on the sternum.



Fig. 2. Tenaculum inserted and exerting traction.

Under local 1 per cent novocaine anesthesia the fishhook was removed and the tenaculum applied, first one jaw being slipped behind the sternum in the fifth interspace and then its fellow inserted also in the fifth interspace but on the opposite side. About 10 pounds of traction was applied through the overhead block system. The inserted tenaculum with traction applied is shown in Figure 2. Her breathing at once became easier, and there was apparently only minor discomfort associated with the traction. Some difficulty with shifting areas of congestion and atelectasis necessitated repeated bronchoscopies and aspirations. Before it became necssary to do a tracheotomy in order to avoid undue trauma to the larynx, the lungs cleared. Eventually, because we found it had begun to slip, we removed the tenaculum and replaced it with two, one with its jaws in the fourth interspace bilaterally and the other with one jaw in the sixth interspace and the other jaw in the costo-xiphoid angle on the opposite side of the sternum. But the method in general and the tenaculi in particular provided most admirably the anterior thoracic stability we sought.

After about ten days the traction was reduced 1 pound each day until, on the twenty-first hospital day, after complete removal of traction had resulted in no respiratory difficulty and had revealed no remaining sternal instability, the tenaculi were removed. The wounds showed no evidence of infection and healed quickly, and the patient recovered uneventfully.

In retrospect, we quite naturally feel fortunate in many things, not the least of which was the failure of the original trauma and resultant sharp bony edges to pierce the parietal pleura on either side. And while we are thinking thankfully of intact parietal pleura, it might be well to point out that the introduction of such instruments as the tenaculi we used should be done with extreme care if that intactness is to be preserved and if the internal mammary vessels are to be spared.

Summary

The problem of traumatic thoracic instability is recognized, and various possible solutions are men-

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DETECTION OF EARLY CANCER OF THE CERVIX UTERI BY THE PAPANICOLAOU METHOD

An Analysis of 1000 Consecutive Cases

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THE purpose of this communication is to offer an evaluation of the Papanicolaou's cytologic method of diagnosis in early cervical cancer, and to focus attention to an important observation that this method of early diagnosis should be recognized as the most valuable means at our disposal at the present time, of reducing the mortality and morbidity resulting from this condition.

It is not within the scope of this paper to review the fast accumulating literature on this subject, nor is detailed discussion of the technique of the cytologic diagnosis of cancer indicated here. I wish, at this juncture, however, to pay a tribute to the man whose pioneer research into the cytology of the female genital tract had led to the development of a technique for the diagnosis of uterine cancer by the vaginal smear, and who, more than anyone else, is responsible for popularizing the application of the cytologic method in cancer diagnosis. Inspired by his leadership, and following the pattern already set by him, other investigators have devoted their time and facilities in the evaluation of his method, and have repeatedly confirmed his original claims that the vaginal smear method is a valuable aid in the diagnosis of uterine cancer, particularly in its early or incipient stage. Indeed, it may be stated without exaggeration, that since this method of diagnosis has been introduced in practice, literally hundreds of victims of early cervical cancer have probably been cured completely. A tribute is due Dr. Papanicolaou for his persistence and courage in daring to challenge the accepted dictum that a diagnosis of cancer should never be attempted by the cytology of the individual cell alone. Today even the conservative pathologist has come to accept the Papanicolaou method as a useful means of detecting the presence of cancer in man, and to adopt it as one of the major laboratory aids in cancer diagnosis. I have, therefore, purposely used in the title of this paper, the individual name of Papanicolaou to designate the method, rather than an impersonal, if a more scientific term, of cytologic method of cancer diagnosis. It should be emphasized, here, however, that the Papanicolaou stain or method is not specific for cancer cells. Papanicolaou, himself, insists that other staining methods may be used with the same results by those who are accustomed to using them.

The technique[7] of obtaining the smear is relatively simple. No douche or bimanual examination should precede the smear taking. It may be obtained from three separate sources, the vagina (posterior vault), cervix, and the endometrium, all of which Papanicolaou advocates. The vaginal smear contains exfoliated cells from all three areas, and may be obtained by a pipette or a speculum; the cervical smear is obtained by swabbing or scraping the external os and the endometrial smear by means of a cannula (laryngeal cannula). As to the preference for the type of the smear—the cervical or the vaginal—because of its simplicity some prefer the vaginal, which contains the cell types from all three sources. Ayre[1] and others prefer the cervical, claiming that "the cytologic smears taken from the external os of the cervix exhibited a greater concentration of cancer cells." The smear should never be allowed to dry; it should be immersed immediately, while wet, into the alcohol-ether mixture for fixation. This is very important. On this seemingly insignificant point depends the success of the method. Unfortunately, this is not generally appreciated by the referring physician, who makes the smear as he would for bacteriological examination. The staining technique is slightly more cumbersome than the ordinary hematoxylin-eosin method. A few claim that the latter method is just as acceptable. I personally prefer the original Papanicolaou technique. The cells appear more transparent. The delicate nuclear structure seems to stand out more sharply, and cornification is more brilliantly brought out by his stain.

The examination of the smear is time consuming. This is the most trying and unwelcome feature of the whole procedure in an average hospital laboratory, unless a specially trained technician or cytologist is employed to make a preliminary survey or screening of each smear, which is time consuming.

The final diagnosis should rest with the pa-

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From the Pathological Laboraotry of the Charles T. Miller Hospital, St. Paul, Minnesota, and the Department of Pathology of the University of Minnesota, Minneapolis, Minnesota.

thologist or a physician specially trained in cytology. The identification of the cell types is not always simple, as some pathologists seem to have imagined. The expert may puzzle over some atypical cells and finally be forced to cast them into a doubtful class. These atypical cells are frequently found in such inflammatory conditions affecting the female genital tract as incomplete abortion, pyometrium, cervical erosion, chronic endocervicitis. Hyperplasia of the squamous epithelium and squamous metaplasia of the columnar endocervical cells are frequently encountered in chronic endocervicitis. Swollen, altered cells, sometimes with a large vesicular nucleus, are commonly seen on the histologic section, which, on the smear, may resemble malignant cells, and mistakenly so diagnosed or labeled as suspicious. Frankly malignant cells, however, usually stand out conspicuously and offer little difficulty for identification. The criteria given for identifying these cells are well known, namely, the nuclear hyperchromatism, vesicularity, and pleomorphism, the increase in the nuclear cytoplasmic ratio, usually the prominent nucleoli, the thick nuclear membrane, the imperfect differentiation, a tendency to clumping, et cetera.

POSITIVE PAPANICOLAOU IN EARLY CERVICAL CANCER
1000 Cases—1093 Smears

	Case	Age	Preg.	Complaints	Cervix[1]	Smear	Biopsy Diagnosis
595 84%	1. VA	64	4	Routine	Smooth[2]	Pos.	Ep. Ca. Invasive
	2. DB	30	4	Int. M. Spotting	Smooth	Pos.	Ep. Ca. Early
	3. RH	38	5	Irregular[3] Bleeding	Smooth	Pos.	Ep. Ca. Early
	4. CZ	46	1	Leukorrhea 1 Hemorrh.	Small Erosion	Pos.	Ep. Ca. Invasive
	5. MM	36	3	Inter. M. Bleeding	Small Erosion	Pos.	Negative[4]
204 1.9%	6. LA	30	5	Routine	Smooth	Pos.	Ep. Ca. Early
	7. BC	34	4	Vaginal Discharge	Smooth	Pos.	Ep. Ca. Preinvasive
	8. ML	40	3	Routine	Slight Erosion	Pos.	Ep. Ca. Preinvasive
	9. ID	48	4	Incontinence	Small Erosion	Pos.	Ep. Ca. Preinvasive
201	10. GC	45	2	Post Coital Spotting	Small Erosion	Pos.	Ep. Ca. Preinvasive
1000 1.0%	Average	41	3.5				

[1]By inspection in the office.
[2]A small granular area inside the os at the time of biopsy.
[3]Bleeding entirely due to a small piece of retained placenta.
[4]Biopsy done several weeks after the cauterization at the time the smear was taken.

Brief Analysis of Cases

The accompanying table gives, at a glance, the pertinent data concerning ten cases of early cervical cancer. A total of 1093 smears were examined, approximately 80 per cent cervical and 20 per cent vaginal. Ninety-three of the smears were repeats. One thousand patients were represented in the study. Of these, 595 were referred by a group of three gynecologists, as routine smears from their office patients, with five positives, or 0.84 per cent; 204 were referred by the gynecologic clinic of the Out-patient Department (Amherst H. Wilder Dispensary) of the Charles T. Miller Hospital, with four positives, or 1.9 per cent. These two groups of 799 patients gave nine positives or 1.25 per cent. The remaining 201 were referred by several physicians, including a few gynecologists, from cases in which there was an indication for taking the smear. There were some thirty-three smears considered suspicious and repeats were taken; in a few instances, a biopsy was made with a negative finding.

Cancer cells were detected in fifteen cases, or 1.5 per cent, of which five had been clinically diagnosed, either as cancer or suspicious of cancer. One biopsy proven case of treated cancer was reported negative by the smear. The remaining ten cases (1.0 per cent- were unsuspected of cancer. A further analysis of these ten cases follows.

All ten patients were married and multigravids except one, with an average of 3.5 pregnancies. Their ages ranged from thirty to sixty-four years, with an average of forty-one years. This is seven years younger than the usually ac-

cepted average minimum age of forty-eight, at which cancer of the cervix is diagnosed. It is noted that five of them were in their thirties (30, 30, 34, 36, 38) and four others in their forties (40, 45, 46, 48). Excluding Case 1 (sixty-four years) an average age for these nine cases would be 38.5 years. Their presenting complaints were relatively insignificant, intermittent or intermenstrual spotting or bleeding being most common, followed in frequency by vaginal discharge. These symptoms were not considered alarming. In three cases no particular complaints were recorded, having merely been submitted to routine smear. In five instances, the cervix was reported clean and considered negative, on inspection at the office. Some of these patients were recalled in the light of the positive smear, and the cervix were re-examined at the office with a negative finding. One such patient (Case 1) was re-examined under anesthesia, prior to biopsy. When the posterior lip of the cervix was pulled down by the tenaculum, a small ulcerating lesion was discovered and the biopsy revealed an infiltrating epidermoid carcinoma. The patient in Case 3, suffering from irregular bleeding, had a clean cervix from which a biopsy was taken at random. The surgeon performed a panhysterectomy which I did not advise on the strength of positive cytology, and because of the uterine bleeding, without the biopsy report which later was found to be negative. Multiple sections of the cervix from the removed uterus revealed an early epidermoid carcinoma, mostly *in situ,* with an occasional tendency to invasion. Incidentally, the bleeding in this case was accounted for by a small localized area of retained placenta. Five patients showed a slight erosion of the cervix, but only in one (Case 4) had a biopsy been contemplated. In Case 5, the lesion was cauterized at the time the smear was obtained. The subsequent smears from this patient were negative, and the cervix was healed at the time a biopsy was finally taken. It failed to reveal a carcinoma on serial sections. This was the only case in which a biopsy confirmation was not obtained. The reason may lie in the fact that the cauterization of the cervix might have completely destroyed preinvasive carcinoma which was replaced by regenerating epithelium at the time of the biopsy. In Case 10, multiple fibromyomata with a small cervical erosion had been diagnosed, and a hysterectomy was being contemplated.

In all instances, the discovery of a positive smear was a distinct surprise to the clinicians. Only in one case (Case 4) had a biopsy been planned.

While I have distinguished three grades of carcinoma in this study, namely, the invasive, early invasive and preinvasive, it is felt that the distinction between the last two should not be taken too literally, since the sections deal only with a few small microscopic fields, and both processes may not be demonstrated in a given biopsied section, even though they may actually exist side by side. It is possible, though unlikely, that a few additional positive cases may have escaped the recognition in this study.

Discussion

The present report of successful detection of malignant cells in ten cases of early or preclinical cancer of the uterine cervix in 1000 smears is offered, first, as another addition to the many reports already published in support of the claims of Papanicolaou and his followers, that the exfoliative cytologic method is a valuable aid in the field of cancer diagnosis, and secondly, as a concrete evidence that cancer of the cervix can be diagnosed in its early or incipient and curable stage. The latter, I believe, should be recognized as a major advance in cancer diagnosis in recent years, and should receive the due emphasis it deserves in the evaluation of this method. Most of the publications on the subject have dealt with the statistical analysis of the results obtained in a series of patients, emphasizing, primarily, a high degree of accuracy in diagnosis. Few have placed the primary emphasis on the second and equally important feature of this method, namely, the detection of early or incipient, or preclinical cancer of the cervix, often in lesion-free or symptomless patients, who would otherwise be dismissed as free of the disease. The same patients would return sooner or later with the clinical symptoms and signs of cervical cancer. This may take several years—as many as twelve years. Chances of cure would thus be greatly reduced.

The incidence[6,8] of carcinoma *in situ* of the cervix is variously estimated from .29 to 3.7 per cent. The latter figure probably more nearly approximates the actual frequency, since it was obtained from 1200 whole cervices removed for other gynecological conditions. Nearly half of these patients are said to be symptom-free and about 80 per cent of them show an insignificant

lesion of the cervix commonly seen in multiparous women.[5] The average age in which the lesion is recognized is thirty-six to thirty-eight years, estimated to be ten to twelve years younger than that in which clinical cancer is diagnosed.[9] Therefore, with this method expertly and extensively utilized, the incidence of early cervical cancer should rise materially, and the expectations for complete cure should be vastly improved.

As to the preference for the type of smear, Ayre[1] and others, as already noted, prefer the cervical smear. Foote and Li[3] found, of the eighteen cases of intra-epithelial epidermoid carcinoma, fourteen positives were obtained by the cervical smear, and nine by the vaginal smear, indicating the greater efficiency of the former in their hands. My own experience agrees with the latter. I personally feel that we can obtain more reliable and suitable smears by the direct visualization of the cervix.

Pertinent would also be the data which might throw light on the comparative value of the biopsy and the cytologic method in the daignosis of early, preinvasive cancer of the cervix. A few of such data are now available. Fremont-Smith, Graham and Meigo[4,5] reported that of thirty such cases, the initial vaginal smear was positive in twenty-three, while the initial biopsy in twenty-seven of the thirty patients was positive in thirteen, and questionable in four. Graham, Sturgis and McGraw[5] reported that of the sixteen cases of carcinoma "in situ" in 181 positive cases, the first biopsy failed in eight (a 50 per cent failure) and the first smear failed only in two (a 12 per cent failure). Other investigators are reporting similar experience. In our experience, of the ten smear positive early cases, the first biopsy failed in two. These reports seem to indicate the superiority of the cytologic method over the biopsy in detecting early or incipient cancer. The reason seems obvious, the former includes the exfoliated cells from the entire cervical surface at the os, while the latter takes a small sample from a corner of the cervix, which may happen to be free from the tumor, as in our cases. To overcome this shortcoming, a multiple biopsy or a "ring biopsy" by means of a cone knife has been advocated,[2] allowing multiple histologic sections.

Summary

A brief discussion of the technique of obtaining the smear for cytologic diagnosis of cervical cancer and of the cytology of such smears is presented, and a short critical analysis of ten unsuspected positive cases, routinely detected from cervices free of a demonstrable lesion, or showing only a minor erosion, in 1000 patients, is given. It is pointed out that the cervical smear seems to yield more positives than the vaginal in given series in the hands of the average examiner. It is further pointed out that the cytologic method, originally developed by Papanicolaou, or modified by subsequent investigators, appears to be more sensitive in detecting early preclinical cancer of the cervix than the conventional biopsy.

In conclusion, it should be re-emphasized that the cytologic method is now well established as a major laboratory procedure in cancer diagnosis. A positive vaginal or cervical smear should never be ignored. It should be confirmed by one or more repeats, and by biopsy. A negative smear does not exclude cancer. Since the only guarantee, if any, for the cure of cancer of the cervix, at the present time is its earliest possible recognition, and since the cytologic technique has satisfactorily demonstrated its greater effectiveness, in competent hands, in detecting early or preclinical cervical cancer than any other method known, and since the routine biopsy in office practice is neither indicated nor practical, the Papanicolaou method of cyto-diagnosis or any of its modifications may profitably be employed in the routine gynecologic practice to aid in the discovery of the cases of early cancer of the cervix uteri which may otherwise be overlooked. Universal application of this method in cancer detection centers and in dispensary clinics seems to be the next step which will be demanded of the medical profession.

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FACTORS IN THE DIAGNOSIS OF SQUINT

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IN this discussion only one type of squint will be considered, namely, monocular convergent squint. This is one of the most common muscle problems found in infancy and childhood, and it deserves special attention because of its many unique features.

By way of definition, this is a muscle imbalance in which it is always the same eye that turns in. It is found in children who have a poor fusion faculty, and it is usually associated with a far-sighted refractive error. It occurs chiefly from the first to the third years of life. Amblyopia or "disuse blindness" invariably develops in the squinting eye, if the child is not treated, and the end result is complete absence of binocular vision.

Whenever the question of the cross-eyed child arises in any discussion between the physician and the opthalmologist, the eye man is frequently asked: "At what age do you want to see these cases?" The answer is usually: "As soon as a definite diagnosis of squint is made." The next question could logically be: "Well, why? You're not going to operate these infants at the age of six months or a year. What's the rush?" And this latter is a good question, because it brings up the subject of the nonsurgical treatment of squint. This is closely tied in with the importance of early diagnosis and institution of early treatment in the case of the cross-eyed child.

I'd like to say a few words about some of the problems and pitfalls the general physician encounters in trying to establish a diagnosis of squint. In most cases when a parent becomes alarmed about whether his child has a crossed eye, he turns first to the pediatrician or family physician, rather than to the eye man for advice. The attitude that the physician takes toward the problem may have a very profound influence upon the child when he later reaches adult life. Of all pediatric eye conditions, squint assumes the greatest importance because of the relative frequency of occurrence. The family physician has a great responsibility in the handling of this problem and in the advice that he gives to the parent. He can err in both directions and to both extremes.

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There are many unfortunate features about the average squint case which makes it a ripe thing for mismanagement. First of all, squint is not a painful thing to the child. Any diplopia which may occur is usually transitory and soon disappears. The deviation of the eye is usually intermittent at first and present only at times when the child is extremely tired. In many instances the parent and the doctor are prone to look at the problem more as a cosmetic one. Actually the disfigurement is only one phase of the matter.

A comment that has been used by some physicians, and one which I would like to condemn heartily at this point, is that the child, as it grows older, will gradually grow out of it. Unfortunately, when a doctor makes this statement, he is too often stating a fact. In many untreated cases of squint, the deviation becomes less marked and the eye which turned in originally, gradually turns out by the simple expedient of the child becoming blind in the deviating eye—amblyopia ex anopsia.

This amblyopia, if allowed to persist beyond the fifth year, ordinarily cannot be treated effectively. If the child does not undergo treatment, or if the treatment is delayed until a late date, the result is markedly reduced vision in one eye and a complete absence of binocular vision. These two features are usually more serious than the cosmetic defect which persists and which can easily be remedied by corrective surgery at any date. An untreated case of crossed eyes, in which it is the same eye which is always convergent, usually ends up with the fixing eye seeing normal, 20/20, and the crossed eye seeing as bad as 20/400. After the age of five or six years the central vision in the squinting eye is usually irretrievably lost and the process cannot be reversed. Before this age, however, measures can be instituted to recover the lost vision. Hence, the importance of the early diagnosis and treatment of squint.

My remarks here are not directed toward the case in which there is a marked crossing of the eyes and where the diagnosis of crossed eye is obvious, but my suggestions are intended for the case where there is a questionable or slight crossing of the eyes.

When the infant or child is brought for the first time to the physician's office and the question

of squint arises, the physician first examines the patient by inspection. The examination is usually difficult because the child is at one minute on the



Fig. 1. Photograph of adult with normal, straight eyes. It illustrates how an equal amount of sclera or "white" of the eye shows medial and lateral to the cornea in each eye, when the eyes are in primary position gazing directly ahead.

mother's lap, the next minute on the floor, the next minute across the room, and presently pulling books off the physician's desk. If an attempt is made to immobilize the subject, the child often resists, cries out, and closes its eyes forceably, thus defeating the entire purpose of the examination. I mention this activity, because when a child is observed under these conditions its eyes are being noted not only in the primary position but more frequently when they are turned one way or the other.

The amount of sclera, or white of the eye, which shows on each side of the cornea has a lot to do with the appearance or simulated appearance of a crossed eye. Ordinarily when a normal individual is viewed with the eyes in primary position, almost an equal amount of white shows on each side of the cornea, and a mental note is made of the fact that the eyes are straight (Fig. 1). However, if less white of the eye shows medial to the cornea than laterally, as is the case with a crossed eye, it gives the eye the appearance of turning in. (Fig. 2)

I call attention to these facts because there is a condition in infants and young children known as "epicanthal folds" which simulates the appearance of true squint. The epicanthal fold is a small fold of skin arising from the upper eyelid and insert-



Fig. 2. A case of monocular convergent squint. The right eye is "fixing," and the light reflex falls in the midline of the right cornea. The left eye turns "in," and it can be seen that the reflex falls lateral to the center of the cornea, indicating that the left eye is actually "crossed." It should also be noted that the amount of sclera exposed lateral to the left cornea greatly exceeds the amount of sclera visible medially on the left eye.

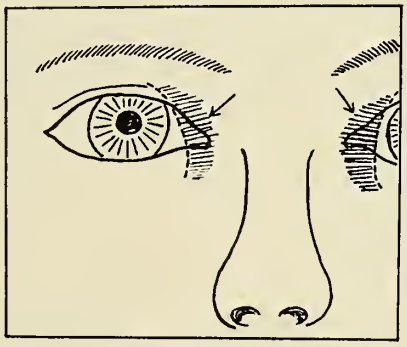


Fig. 3. Epicanthal folds (diagrammatic representation). Shaded areas (indicated by arrows) represent the epicanthal folds which hide the medial sclera and inner canthus.

ing into the side of the nose medial to and below the inner canthus (Fig. 3). This fold of skin will often hide the inner canthus entirely, and will also thereby hide a good portion of the medial sclera.

When a child with this condition is observed, especially if the eyes are not in the primary position, the eye which is looking across the nose will appear to be turned in markedly, and it gives the appearance of being a true case of crossed eye (Fig. 4). Because epicanthal folds usually occur bilaterally, either eye at different times may ap-



Fig. 4. Three views of a patient with epicanthal folds which simulated a true squint.

(*A*) Eyes directed slightly to the patient's right. Note how *left eye* appears to be crossed.

(*B*) Eyes directed slightly to the patient's left. In this position it is the *right eye* which appears to be crossed.

(*C*) With eyes in the primary position, it will be noted that the light reflex falls in the exact center of each cornea, indicating that the eyes are actually not crossed. (Corneal Reflex Test—Hirschberg)

pear to be turned in, depending upon whether or not it is looking across the nose at the physician. In order to minimize the effects of these epicanthal folds, the skin over the dorsum of the nose can be grasped between the forefinger and thumb, or with a pair of blunt forceps, and it will be readily seen that the eyes appear to be much less crossed and more normal in appearance. This procedure exposes the normal amount of sclera which is ordinarily seen medial to the cornea.

It is thus seen that comparing the amount of sclera which is showing medial or lateral to the cornea is not a reliable method of judging whether squint is present. However, we are constantly subject to this error unless we consciously guard against it.

In order to avoid this pitfall in diagnosis, a simple test known as the "Hirschberg corneal reflex test" can be carried out which will usually give the true information immediately. A small point source of light, such as an ophthalmoscope bulb, can be used and held at a distance of three feet or more from the child's eyes. This light can be turned on and off to attract the child's attention and the reflection of the light on the cornea may be observed. If this reflection lies in the center of the pupil in each eye, regardless of how crossed the eyes otherwise look, the child has normal, straight eyes (Fig. 4 *C*).

Another test which is a little more difficult of performance and requires greater co-operation from the child can be carried out. This is known as the "cover test." This procedure is based on the fact that, normally, eyes directed at a distant object do not deviate under cover. The child's attention is drawn to a distant light or object, and one eye and then the other is alternately covered with a small piece of paper or the examiner's hand. As the hand is moved from one eye to the other, the eye which is being uncovered is observed. If a movement either out or in is noted, a muscle imbalance is usually present. Using this test, the imbalance noted may be either a manifest deviation, as is the case with true squint, or it may be a latent imbalance which is commonly known as a "phoria."

Each eye can be separately covered also, and this will result in a lateral movement of the fellow eye, if the fixing eye has been covered in a case of convergent squint.

Where epicanthal folds are present and causing the appearance of crossed eyes, the parents can

be reassured that these structures usually disappear as the face and head enlarge during normal development.

If on inspection the eyes appear to be normal and straight, the parents should be asked about the constancy of the squint, because it is always possible that the deviation of the eye does not occur during examination. In this case it is well to reserve your judgment or opinion and have the child return for another visit. The parents should be instructed to bring the child back when he is tired or fatigued, because this is the time that transitory squints are more prone to be present.

As has already been mentioned, the deviating eye usually suffers a reduction in visual acuity. If the history is obtained that it is always the right eye that turns in, and if it can be demonstrated with the illiterate "E" chart that the vision is reduced in the right eye over that of the left eye, then the case should be looked upon very definitely as a true monocular squint. It is this type of case that should be referred at the earliest possible date to the opthalmologist. Refraction should be carried out after the use of atropine in the eyes, and a full correction, in the form of glasses, of the far-sighted refractive error should be given. This procedure, if carried out early in the case, results in straight eyes in over 50 per cent of the cases without any surgical intervention. If, however, full correction of the far-sighted error does not result in parallelism of the eyes, surgical correction is instituted.

If amblyopia can be detected by the ophthalmologist, full time occlusion of the good eye is instituted immediately, and very often results in restoration of vision in the eye which is turned. To be effective, occlusion must be carried out during all the child's waking hours, and, for this reason, it is important that this type of treatment be instituted before the child begins school. Once classes have begun, it is impossible to carry on an adequate program of occlusion of the fixing eye, because the child does not have enough vision in the squinting eye to carry on normal activities in the classroom.

The ideal result in this type of case would be a pair of straight eyes with normal vision in each eye and a normal relationship between the two eyes in the form of true binocular vision. This would be a functional as well as a cosmetic result. In many cases, however, too much time elapses before treatment is instituted and the child ends up with an amblyopic eye. The value of cosmetic surgery in itself should not be minimized, because a cross-eyed child quickly develops personality changes and a feeling of inferiority as the result of the cruel remarks of his or her playmates. This is especially true once the child starts attending school and is another important reason why the eye should be straightened if possible before the child reaches school age.

In summary, monocular convergent squint often presents a problem in early diagnosis. A fairly common condition known as "epicanthal folds" has been shown as a source of error in determining the presence of squint. The "corneal reflex test" and the "cover test" have been described and suggested as aids in detecting cases of "false" squint. Two important reasons for early diagnosis and treatment of this condition before school age have been indicated.

SKELETAL TRACTION IN THE TREATMENT OF TRAUMATIC ANTERIOR THORACIC INSTABILITY

(Continued from Page 487)

tioned. A case of multiple bilateral rib fractures and costochondral junction separations, resulting in an unstable sternal segment with consequent respiratory embarrassment, is presented, together with the description of a method of re-establishing thoracic stability by suspension of the sternal segment, using modified uterine tenaculi.

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PERIRECTAL ABSCESS PRODUCING SYMPTOMS OF GENERALIZED PERITONITIS

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ABSCESSES involving the perirectal surgical spaces other than the ischiorectal fossae are relatively few in number. Patients suffering from abscesses of the supralevator or pelvirectal spaces and of the posterior or retrorectal space are usually profoundly ill and in severe pain. Fatalities have occurred from abscesses in these areas due either to sepsis from the original abscess or to peritonitis following rupture into the general peritoneal cavity. Irritation of the pelvic peritoneum from an underlying abscess cavity may produce the symptoms of a true peritonitis without actual involvement of the peritoneal cavity itself. A case which produced symptoms of peritonitis is presented in this report.

Case Report

C. M., a mulatto, male, aged forty-one, was admitted to the Veterans Hospital in Minneapolis on the evening of January 24, 1948. The patient stated that approximately ten days previously he began to have severe pain in the rectum when he coughed and when he had a bowel movement. He consulted his physician who prescribed penicillin, rectal suppositories and hot packs. The patient continued to work but became progressively worse from day to day. During this period he had a fairly good appetite, but his bowels became constipated and he vomited on one occasion. For several days before admission to the hospital his bowel movements were accompanied by excruciating pain in the rectum.

On the day of admission to the hospital the patient became very ill and complained of severe pain in the lower part of his abdomen and of a constant severe pain high in the rectum. His temperature on admission was 101 degrees; the pulse was 108; respirations were 24 per minute.

The patient appeared acutely ill, and it was noticed that there was splinting of the abdominal muscles during respiration. The abdomen was mildly distended and a fairly marked degree of muscle rigidity was present over the entire abdomen. Extreme tenderness was elicited over the lower half of the abdomen and rebound tenderness was present.

Inspection of the buttocks revealed no abnormal findings and palpation of the tissues over the ischiorectal fossae did not elicit signs of an underlying abscess. Not until deep pressure was applied did the patient complain of pain or tenderness.

A digital rectal examination revealed the presence of a large, painful induration involving the rectal walls anteriorly, laterally and posteriorly. A definite feeling of fluctuation was present which extended to a higher level laterally than it did either anteriorly or posteriorly.

The general physical examination was otherwise entirely negative. An upright x-ray plate of the abdomen revealed no evidence of obstruction or perforation. The x-ray of the chest was negative. Routine laboratory studies of the urine and blood were negative.

A diagnosis of perirectal abscess involving the supralevator spaces and a possible involvement of the retrorectal space was made. The patient was taken to the operating room where spinal anesthesia was given and the right ischiorectal space was unroofed. Pus was not encountered until the levator muscles were reached. At that point an abscess was encountered which contained a very large quantity of pus. The finger which was put into the abscess cavity could be directed to an extension of the cavity posteriorly through the post-anal space and into the left ischiorectal fossa. The left ischiorectal fossa was then uncovered and a communication established with the deep abscess on that side.

No further attempt was made to explore the supralevator space at that time. The overhanging edges of the abscess cavities were trimmed away, thereby creating two large wounds which would stay open without packing. A finger inserted into the rectum at this time revealed the complete disappearance of the mass previously described.

The patient was then returned to the ward, and by the next morning his temperature was normal and he was free of pain. That evening his temperature reached 100.2 degrees and thereafter it was normal. Routine postoperative rectal care with hot sitz baths was given, and the patient was discharged on February 9, sixteen days following the operation.

On March 23 the patient was readmitted for treatment of his fistula. Operation was performed on the following day, and a rather extensive fistula was found. No difficulty was encountered in laying open the entire tract which had its primary opening in the posterior midline crypt and which involved the two supralevator spaces as well as the posterior rectal space. The patient was discharged from the hospital on April 26, approximately four weeks following operation. He returned to work at that time, but healing of the fistula wound was not complete until June 15, 1948.

Comment

A case of bilateral, supralevator, pelvirectal abscess which produced symptoms of peritonitis is presented. The abscess was drained through the ischiorectal fossae, although these spaces were not directly involved. Complete disappearance of the symptoms of peritonitis, which may or may not have been due to actual involvement of the peritoneum, followed the drainage of the abscess.

Read at the annual meeting of the Southern Minnesota Medical Association, Winona, Minnesota, September 13, 1948.

History of Medicine In Minnesota

HISTORY OF MEDICINE IN NICOLLET COUNTY

(Continued from April issue)

1809-1900

Jared Waldo Daniels, the son of Dr. Asa Daniels, was one of the new physicians who began to practice in St. Peter in 1890. He had received his medical training at Rush Medical College and at Columbia University. He served on many local boards and belonged to local and state medical fraternities. James H. Bowers, a homeopath, also practiced in St. Peter for a few years. A Dr. Sweet from Kasota opened a drug store in St. Peter. In the town of Nicollet, C. Wilbor Ray, an eclectic physician, succeeded Dr. Wicke, whose stock of drugs he purchased from the doctor's widow. In St. Peter, George Ranson succeeded Dr. Collins, who died in 1898. Ranson himself died suddenly about a year later. He was succeeded by Fred P. Strathern. There was also a Dr. Caldwell from St. Paul who spent a short time in the town.

A number of new physicians came to the State Hospital for the Insane. The following list included those who were there from the date of its organization up to 1900.

Superintendents

Samuel E. Schantz.....November, 1866—August, 1868
Cyrus K. Bartlett.....November, 1868—January, 1893
Harry A. Tomlinson.....January, 1893—October, 1912

Assistant Physicians

Jacob E. Bowers.....December, 1867—January, 1879
John E. James.....June, 1876—December, 1891
Thomas J. Naylor.....February, 1880—May, 1881
W. A. Jones.....May, 1881—October, 1883
George W. McIntyre.....October, 1883—May, 1884
Arthur F. Kilbourne.....May, 1884—June, 1889
George W. McIntyre.....(Second term) July, 1889—May, 1893
Edward M. Flint.....February, 1890—May, 1893
Harry A. Tomlinson.....December, 1890—January, 1893
Nathan M. Baker.....May, 1893—August, 1895
C. A. Erdman.....May, 1893—June, 1893
Gustave A. Chilgren.....June, 1893—August, 1898
Ella B. Everett.....September, 1893—September, 1896
Thomas R. Foster.....October, 1893—May, 1905
W. H. Darling.....September, 1895—January, 1908
Mary E. Bassett.....September, 1896—July, 1898
Abraham F. Strickler.....June, 1898—May, 1899
O. M. Justice.....May, 1897—May, 1898
C. F. Tuomy.....September, 1898—September, 1906
Donald A. Nicholson.....May, 1899—December, 1904
M. E. Ranson.....July, 1898—June, 1900

Scarlet fever appeared in a mild form during the nineties, particularly in the early years. There were a few fatal cases each year, most of them occurring in Nicollet, Courtland and Brighton. Diphtheria was also reduced, to a very marked extent, in both the number of cases and their virulency. Most of the cases were outside of St. Peter. It was probably at its worst in 1891 when there were eleven deaths in Lafayette. In 1890 there were a number of cases of typhoid in St. Peter and, in 1896, there was a mild epidemic of measles. Compared to the preceding ten years, the health of the county underwent a remarkable improvement.

Dr. Skinner, writing in 1890 on the subject of scarlet fever, was of the opinion that mild epidemics of the disease should have no interference. He held that it was better to have a mild case and then be safe forever. He based his reasoning on the analogy that immunity to smallpox is gained by vaccination—merely giving a person the disease in a very mild form.

About this time Dr. Skinner rented four extra rooms in the Amundsen Building and fitted them up to serve as the first private hospital in St. Peter. According to his advertisement, surgical, medical or lying-in cases were admitted and patients might employ any physician they chose. A private telephone line connected the doctor with Kasota, in Le Sueur County, so that he drew patients from that quarter too.

Doctors Skinner and Merritt served as county coroners and, in St. Peter, Doctors Collins and McIntyre served as health officers.

New members of the Minnesota State Medical Society included the following physicians who were practicing or had practiced in Nicollet County during the nineties: E. N. Flint (1892), G. W. McIntyre (1892), Elizabeth C. Mallison (1892), H. A. Tomlinson (1893), C. M. Skinner (1893), J. G. Erickson (1893), J. W. Daniels (1893), Nathan Baker (1892), G. A. Chilgren (1894), D. B. Collins (1894), George Ranson (1897), Ella B. Everett (1897), and E. P. Strathern (1899).

New members of the Minnesota Valley Medical Association included: J. W. Daniels, C. M. Skinner, N. M. Baker, G. A. Chilgren, H. D. Valin, T. R. Foster, E. B. Everett, and H. A. Tomlinson. Doctors McIntyre, Collins, Tomlinson and J. W. Daniels also belonged to the Southern Minnesota Medical Association. C. Wilbor Ray belonged to the State Eclectic organization.

In January, 1894, the Nicollet County Medical Society was organized and Doctor Chilgren was selected as permanent secretary. The group planned to meet on the last Saturday of every month and to have a paper on some subject of interest presented at each of these monthly meetings. Some of the first reports included an essay on diphtheria by A. W. Daniels: "The Artificial Feeding of Infants," by Dr. Merritt; "The Etiology and Prophylaxis of Tuberculosis," by J. W. Daniels; "Water, in Health and Disease," by Dr. Skinner; "Hysteria," by Dr. Tomlinson. Others who were present at the first meeting were Doctors McIntyre, Everett, N. M. Bauer, Collins, Foster and Wicke.

The Nicollet-Le Sueur County Medical Society was not organized until 1903. The first meeting was held in St. Peter and Dr. Tomlinson was the first president.

Nicollet County Physicians

Anderson, C. A., was a physician at the state hospital in St. Peter in 1893 or 1894.

Baker, Nathan Morton, was born in Nicollet county, in 1859. He attended school in Le Sueur County and in St. Peter and was graduated from the University

of Minnesota in 1884, with the degree of Bachelor of Arts. He taught school and was a chemist for the State Board of Health. He was graduated from the medical department of the University of Pennsylvania in 1889 and, in November of the same year, was appointed assistant physician at the State Hospital for the Insane at Rochester. He remained there until May, 1893. At this time he was appointed first assistant to Dr. H. A. Tomlinson at the St. Peter Hospital. He served at St. Peter for two years, then moved to Spokane, Washington, where he located permanently. Dr. Baker was a member of the Nicollet County Medical Society, serving as president, and also listed membership in the American Medical Association and the Spokane Board of Health.

Bartlett, Cyrus Kilhune, was born in Boxford, Massachusetts, in 1829. He studied under private tutors before entering the Harvard Medical School, from which he was graduated in 1852. He practiced medicine at Charlestown, Massachusetts, from 1852 to 1858, when he was appointed assistant superintendent of the St. Peter Hospital for the Insane, succeeding Dr. S. E. Schantz. In 1892, after twenty-four years of successful service, he resigned and moved to Minneapolis where he practiced his specialty of mental and nervous diseases until his death, in 1911. Dr. Bartlett was a member of the Minnesota Valley Medical Association, serving as its president in 1882, and the Minnesota State Medical Association.

Bassett, Mary Elizabeth, was an assistant physician at the St. Peter Hospital from September, 1896, to July, 1898. In 1899 she married Dr. C. W. Bray in Saint Paul and moved to Biwabick, Minnesota.

Bolon, V., was born in Hanover, Germany, in 1817. He came to the United States in 1845. During the Civil War he served as assistant surgeon in an Illinois regiment. In September, 1878, he located in St. Peter, specializing in eye and ear work and recommending himself as a *geburts-helfer*. He died August 6, 1881, following a paralytic stroke.

Bowers, Jacob Eton, was born in Berlin, Ontario, Canada, in 1811. He attended the Berlin grammar school and Toronto University where he received his Bachelor of Arts and Master of Arts degrees. He then entered the University of Michigan and received his medical degree in 1868. He immediately accepted the position of assistant physician at the St. Peter Hospital, under Dr. S. E. Schantz, beginning work in April. When Dr. Schantz died, Dr. Bowers served as acting superintendent until the arrival, five months later, of Dr. C. K. Bartlett. In 1878 he was appointed superintendent of the Rochester Hospital for the Insane and served until October, 1889, when he moved to Duluth. He practiced his specialty of mental and nervous diseases until 1906 when he retired from practice, making Duluth his home. He was a member of his county medical society, the Minnesota State Medical Association, and the American Medical Association.

Bowers, James H., was graduated from the Chicago Medical College in 1885. He practiced homeopathy, locating in St. Peter in May, 1891, and remaining until January, 1894, when he moved to Riceville, Iowa. From 1897 until 1899 he was in Owatonna.

Bullious, L. H., was graduated, in 1862, from Harvard University. He came to Minnesota because he was suffering from tuberculosis, and located in St.

Peter, sharing an office with Dr. A. W. Daniels. In making a call, he was thrown from his cutter and broke his leg. As a result, his health became worse. He returned to Massachusetts, where he died in 1863.

Barthelow, Roberts, was the third post surgeon at Fort Ridgeley. This was sometime between 1853, when Dr. A. W. Daniels left, and 1861, when Dr. Alfred Mueller was appointed. He was born in 1831 and died in 1904. He was a surgeon in the army from 1856 until 1864 and took part in expeditions to Utah, New Mexico and the western plains. At the outbreak of the Civil War he was attached to the military post at Fort Bridger, Santa Fe, New Mexico. Later he was in Washington. He taught in one of the medical schools in Cincinnati and later was a professor at the Jefferson Medical College. He authored *Materia Medica and Therapeutics,* long a popular textbook.

Caldwell,———, of St. Paul, took over Dr. C. W. Ray's practice in Nicollet while the latter was in Boston during the summer of 1899.

Catlin, Hiram Wesley, was the first physician to locate in Nicollet County, if physicians employed by the government and residing at the fort are exempted. He was born on a farm in Washington County, Indiana, November 27, 1820. At the age of seventeen, he started to study medicine. He was graduated from the Louisville Medical College in 1846, enlisted in a volunteer regiment and served one year in the Mexican War. He took part in leading battles under General Taylor and his knowledge of his profession rendered him useful in the absence of the regular surgeon. He returned and practiced in Georgetown, Indiana. He was a member of the Indiana legislature in 1853. In 1855 he came to St. Peter, where he practiced until his death in 1861. His son and grandson both took up the practice of medicine.

Catlin, T. J., practiced in St. Peter in 1874. He is probably the same Dr. Catlin who, in September, 1881, came to St. Peter, presumably from Delano, Wright County. In November of the same year he returned to Delano.

Chilgren, Gustave Arthur, was born in Lake Prairie township, Nicollet County, in 1865. He was reared on a farm and attended district and St. Peter schools and the University of Minnesota, which he entered about 1884. After graduation, he taught school for a while, then entered the medical department of the university and received his degree in 1892. In August, 1893, he began his work as assistant physician at the St. Peter Hospital for the Insane. He remained until May, 1898, when he resigned to accept the position of assistant superintendent of the South Dakota Hospital for the Insane at Yankton. Six months later he moved to Sauk Rapids, Minnesota, where he practiced for seven years. About 1907 he moved to Burlington, Iowa. Dr. Chilgren was a member of the Nicollet County Medical Society, the Minnesota Valley Medical Society and the Minnesota State Medical Association.

Clark, E. F., resided in St. Peter at an early date. From 1856 until his death, in 1879, he was in Winona.

Collins, Daniel B., was born in Dane county, Wisconsin, in April, 1848. When six years old, he moved, with his parents, to Milton, Wisconsin. Here he attended school and college. He gave his services to his country in the latter

part of the Civil War. In 1871 he was graduated from Rush Medical college and, in the same year, commenced practice in St. Peter, with Dr. A. W. Daniels. In 1876, he moved to Cleveland, Le Sueur County, where for two years he was examining surgeon for pensions. From 1878 until his death, February 14, 1898, he practiced in St. Peter. In 1887 he was appointed a member of the State Lunacy Commission, which position he held until his death. He was several times health officer and city physician, and was surgeon for the second regiment, Minnesota National Guard. During 1890, 1891 and 1894, he attended medical lectures in Chicago and New York. He was a member of the Nicollet County Medical Society, the Minnesota Valley Medical Society, of which he was once president, and the Minnesota State Medical Association. He was also a member of the Military Surgeons of America, the GAR and numerous fraternal orders.

Cosner, Isaac, was one of the first homeopaths to locate in Nicollet County. He came to St. Peter in November, 1866, from Illinois, and remained until 1887 when he moved to Saint Paul. He died January 3, 1888. He was coroner of Nicollet County in the early seventies.

Daniels, Asa Wilder, was one of the first physicians in Nicollet County and became one of the most prominent members of his profession in that locality. He was born in Stratford, New Hampshire, January 15, 1829. He was reared on a farm, attended the public schools and Lancaster Academy. He moved to Boston with his mother and studied medicine there under the direction of his uncle. Later he taught physiology and anatomy. After two years at the Medical College of Ohio, at Cincinnati, from which he was graduated in 1853, he was appointed assistant surgeon at Fort Ridgely, in the western part of Nicollet County. A few months later he was appointed resident physician at the Lower Sioux agency in Redwood county. In July, 1861, he moved to St. Peter, where he practiced until he moved to Pomona, California, in 1908. At the Indian outbreak of 1862 he went to New Ulm with the volunteers commanded by Major Charles E. Flandreau where, with Dr. Otis Ayer of Le Sueur, he gave valuable surgical aid to the wounded. Dr. Daniels held the position of pension surgeon for several years and was Nicollet County physician during the seventies. He was also a member of the first State Board of Health, appointed in 1872, serving one term. In 1866, Dr. Daniels spent several months attending lectures and visiting hospitals throughout the country. He was one of the directors of the First National Bank of St. Peter, a director of the city library and, in 1899, was appointed a member of the State Board of Hospital Trustees. In 1887 and 1888 he traveled abroad and, during the nineties, he often visited California, eventually moving there and remaining, in retirement, until his death at Pomona, February 17, 1923, at the age of ninety-four. He was a member of the Nicollet County Medical Society, the Minnesota Valley Medical Society, the Minnesota State and the American Medical Associations.

Daniels, Jared Waldo, the son of Dr. Asa W. Daniels, was born in St. Peter, in 1867. He attended school there, entered the University of Minnesota in 1887 and, later, Rush Medical College. He received his medical degree from Rush in 1889. In 1890 he also received a degree from Columbia University. At this time he began to practice in St. Peter. In 1893 and 1894 he took postgraduate work in London and returned to St. Peter, to resume practice. During World War I he was the first from Nicollet county to receive a commission. Since the war he has held a commission as major in the officers Reserve Corps. He was,

for many years, a member of the school board in St. Peter and coroner of Nicollet County. He was a member of the Minnesota Valley Medical Society and the Minnesota State Medical Association. He compiled the history of medical men and societies of Nicollet county in Gresham's *History of Nicollet and Le Sueur Counties* (1916).

Daniels, Jared Waldo, the brother of Dr. Asa W. Daniels, was born in Stratford, New Hampshire, June 15, 1827. He attended Lancaster Academy and Belleview Medical College. In 1855 he came to Minnesota and was appointed government physician at the Yellow Medicine Indian agency (the Upper Sioux agency). In 1860 he commenced practice in St. Peter, but left in October, 1861, when he was appointed physician in a military hospital in Washington. He was assistant surgeon of the Sixth Regiment, Minnesota Volunteer Infantry, from August, 1862, until December, 1863, and surgeon of the Second Minnesota Cavalry from January, 1864, until November, 1865, with the rank of major. He served in the Department of Minnesota under General H. H. Sibley in 1862 and 1863, in the Department of Missouri under General Alfred Sully in 1864, and again in the Department of Minnesota from the fall of 1864 until discharged. In 1865 he settled in Faribault, Rice County, and probably served there as an Indian agent. From 1867 until about 1882, he apparently resided, off and on, in St. Peter. From 1882 until 1900 he was in Faribault. In 1869 Dr. Daniels was appointed agent at the Sisseton Indian agency and, about a year later, was appointed to the Red Cloud agency in Wyoming. In 1873 he was made inspector of Indian agencies and, at intervals between that time and 1887, made treaties with the Sioux and was appointed to special commissions which treated with tribes in Dakota, Montana, Idaho and Washington. In 1900 he moved to Los Angeles, California, where he died May 3, 1904, after being ill for a short time with pneumonia. He was buried in the family lot at St. Peter.

Darling, W. H., was an assistant physician at the St. Peter Hospital for the Insane from September, 1895, until January, 1908. In the winter of 1897-98 he took postgraduate work in Boston and, in December, 1898, he took additional courses in New York. In May, 1898, he was chosen assistant superintendent of the hospital, succeeding Dr. G. A. Chilgren.

Erdman, C. A., came from Minneapolis to be temporary assistant at the state hospital at St. Peter from May to June, 1893.

Ewing, R. H., was one of the early physicians of St. Peter, locating there in 1856. He left for the south three years later. He died in Grand Rapids, Michigan, in the fall of 1876.

Everett, Ella B., was born in 1866. She was graduated from the Women's Medical College of Pennsylvania in 1891 and became superintendent of the Northwestern Hospital in Minneapolis. In September, 1893, she commenced work as assistant physician at the St. Peter hospital. In 1896 she went to Mankato to practice and a year later she returned to Philadelphia to take charge of a women's hospital. She served for several years on the faculty of her alma mater, until her death in 1934, following an automobile accident.

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President's Letter

MENTAL HEALTH PROGRAM PROGRESSES

Treatment of the mentally ill has progressed mightily since the time when these unfortunates were thought to be possessed by evil spirits and when they were often burned as witches or punished as criminals.

Typical of the modern approach to this problem is the mental health bill passed by the Minnesota legislature this session. An outgrowth of long and continuing efforts by the medical profession and promising to correct many of the deficiencies of the state's present program, the bill still cannot be regarded as the final answer to the problem of mental health; nor will it result in an immediate, sharp decrease in the number of institutionalized mental patients.

Governor Youngdahl in a recent radio speech stated:

"Doctors expert in the field of psychiatry hold out the hope that with adequate funds and sufficient trained personnel our mental hospitals may be able in time to send home within six months as many as 75 per cent of the patients admitted.

"Whatever the percentage, it is clear that with the new services now made possible we will be able to restore many of the patients to health in a short time."

Basing my opinion on forty-two years in private practice of neuro-psychiatry, it seems to me unwise to be unduly optimistic, to expect such a high recovery rate. This will lead not only to great disappointment to both patients and relatives but perhaps to unjust criticism of state hospital superintendents, if this high goal is not attained under this new program.

The Governor's Advisory Council on Mental Health, which included seven psychiatrists, called attention to one factor that will continue to retard the number of cures affected: "At the present time 40 per cent of all patients admitted to the state mental hospitals are over sixty-five years of age. All available population statistics and expert opinion indicate that for the next thirty or forty years the percentage of people over sixty-five in the general population will continue to increase. It is evident that the care of the aged and senile will continue to be an increasing problem."

The 28-million-dollar program will, of course, make these and the other mental patients more comfortable and will facilitate the possibility of cure in many cases; but a certain percentage will remain incurable.

More adequate housing will be provided for the state's 15,000 men, women and children now suffering from mental ills and an increase of more than 20 per cent in the number of attendants, now listed at 1,900, will assure closer supervision and attention to the patients' needs. Again, following the recommendations of the advisory council, administrators of the program will seek for additional highly trained doctors, psychologists and occupational therapists. Research will be aided by an annual $50,000 grant.

This is a good beginning, but, as such, it must not be mistaken for the final chapter in Minnesota's attempt to help the mentally ill.



President, Minnesota State Medical Association

(Continued from Page 502)

Flint, Edwin N., was graduated from the University of Illinois in 1887. He practiced in Saint Paul and, in February, 1890, came to St. Peter, where he served at the state hospital as assistant physician. In 1893 he resigned this position and opened an office in St. Peter. After a few months he moved to Winthrop, Sibley County, where he was appointed pension surgeon in that district. He also practiced in Gaylord, in the same county, and finally located permanently in Chicago.

Flossian, M., was a French physician who located in St. Peter in June, 1864.

Foster, Thomas R., was an assistant physician at the St. Peter Hospital for the Insane from October, 1893, to May, 1895, when he left for Kankakee, Illinois. He served a second term at the hospital from September, 1920, to June, 1921.

Hasson, Alexander, was born in Maryland and received his appointment in the army from that state. He became an assistant surgeon June 29, 1849, and, August 17, 1861, became a surgeon, with the rank of major. March 13, 1865, he was made brevet lieutenant colonel for faithful and meritorious service during the war. He was the first physician in Nicollet County, serving as post surgeon at Fort Ridgely for a few months in 1852. He died in March, 1877.

Hoberg, C., located at Traverse in 1864, where he practiced until his death, June 19, 1874.

Horne, ———, came to St. Peter in 1856 or 1857. He superintended the building of the first school in St. Peter. In a few years he moved to New England and died at his home in Malden, Massachusetts, in the spring of 1899.

Humphrey, Philander P., located in St. Peter in June, 1857, and practiced there until appointed physician at the Lower Sioux agency in Redwood county. In the Indian outbreak of 1862 he and his family escaped from the agency and made their way toward Fort Ridgely. They managed to cross the river and, on the other side, entered a house to rest. The eldest boy was sent to the spring to get some water for his mother who was not well. While he was gone Dr. Humphrey, his wife and the other children were murdered by the Indians.

Hunter, William F., came to St. Peter in the spring of 1855. He practiced there only a few years.

James, John Henry, was assistant physician at the St. Peter Hospital from 1876 until 1891 when he moved to Mankato. While at the hospital he was often called to attend patients in St. Peter and the surrounding country and he performed several difficult operations of the eye.

(To be continued in June issue)

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

THE ANTICOAGULANTS

THE ANTICOAGULANTS, dicumarol and heparin, have proven of great value in a variety of conditions in which prevention of the formation or extension of an intravascular thrombus is indicated. When prompt action is desired, intravenous heparin is indicated. Its cost, however, has limited its use. Dicumarol, when given orally in the usual doses, does not become effective for two or three days in most cases. The importance of prothrombin determinations before the administration of either anticoagulant and the frequent repetition of the test while it is being administered cannot be too strongly emphasized. Some patients, normally or as a result of their illness, have an already low prothrombin, and the response to this medication is variable. Unless, too, a reliable laboratory is available, the anticoagulant should not be used. Considerable confusion has resulted from the fact that various methods have been used by the laboratories in reporting the prothrombin test, and the clinician must be familiar with the method used.

The value of the anticoagulants, more particularly discumarol, in coronary thrombosis has been well established. While many patients do well without dicumarol, reports of a large series indicate a lowering in thrombo-embolic complications and, according to more recent reports, in mortality from its use. The occasional evidence of an extension of the coronary thrombotic process suggests the advisability of the immediate intravenous administration of heparin. However, in the great majority of cases, the thrombotic process in the coronary vessel is complete before the patient is seen and a prothrombin determination can be made. As most thrombo-embolic complications arise from four to twenty days following the attack, dicumarol is well suited but should be continued for a period of four weeks. There is good reason to expect less chance for the formation of intracardiac thrombi and consequent peripheral emboli by the lowering of the coagulability of the blood.

In the presence of phlebothrombosis, and particularly when the process is extending or recurrent, the anticoagulants are of value. For thromboangiitis obliterns or severe arteriosclerosis with evidence of thrombosis formation, they may be used. Some favorable results have been reported in pulling a patient through an acute phase.

The use of the anticoagulants in the treatment of an arterial embolus in the expectation of limiting thrombosis formation is logical. Fifty milligrams of heparin should be given intravenously immediately, as well as the usual oral doses of dicumarol and papavarin, grain ½, intravenously, to counteract the arterial spasm in the collateral arteries which causes extension of the thrombotic process. Incidentally, in this condition the head of the bed should be elevated and not the extremity involved, no heat should be applied and the patient should be given whiskey for its dilation effect on the arteries. This routine is likely to prove more effective than an attempt at embolectomy.

An additional warning should be given that the use of dicumarol is contraindicated in the presence of kidney or hepatic disease, purpura of any type, any bleeding tendency, in the presence of subacute bacterial endocarditis, or after operations on the brain or spinal cord. It should be used with caution in the presence of an acute peptic ulcer or open wounds.

MEDICAL PUBLICITY

WITH the decision of the House of Delegates of the American Medical Association last December to undertake a national education campaign, the question has arisen in the minds of many members as to what their attitude should be to the National Physicians Committee. This question has been solved by action of the Trustees of the National Physicians Committee at its meeting April 10, 1949, which approved the action of its Managing Committee authorizing cessation of all activities of the organization as of April 1, 1949, and liquidating the affairs of the committee.

The National Physicians Committee was formed ten years ago by a group of officers and fellows of the AMA to carry on medical publicity as an independent organization. Its activities were supported by voluntary contributions by physicians and other individuals and organizations interested in extending medical service without sacrificing the private practice of medicine. Under the able leadership of Dr. Edward H. Cary, chairman of the committee, and John Pratt, executive secretary, the committee has carried on a dynamic program and deserves the thanks of the medical profession and the public at large. In taking a vigorous stand against socialism and communism in general, it has aroused the bitter enmity of the proponents of a change in our social order.

Whether the repercussions which followed the transmissal of Dan Gilbert's Washington Letter of December, 1948, to the medical profession and the protestant clergy of the country had anything to do with the termination of the NPC, we do not know. That these repercussions were widespread and violent is evident. It would seem that it was not so much the material contained in the letter as the author and his former association with the Silver Shirts that aroused such a furor. According to newspaper comment, repercussions have had their effect on members of the medical profession and may have accounted for the reversal of the vote of the membership of the New York County Medical Society on the twenty-five dollar AMA assessment in January. The majority of the membership were in favor of the assessment. In a recent vote, the majority of those voting were opposed. The count showed 432 against the assessment and 333 for it. The total membership, however, is nearly 6,000.

According to an editorial which appeared in the February 26, 1949, number of the *Journal* AMA many hundreds of letters have been received by the AMA office bitterly condemning the Dan Gilbert letter. The editorial explains: "The Gilbert letter was sent without the knowledge of any official of the AMA; every official of the AMA joins in condemning the letter as an expression of medical opinion in this country and the AMA does not require allies of doubtful repute in its campaign for the maintenance of a high quality of medical care and for freedom in medicine in our country."

It would perhaps be too much to expect 100 per cent of the AMA membership to back any policy proposed by the House of Delegates. If there is any activity of the AMA, however, which deserves 100 per cent support it is the National Publicity Campaign adopted by the House of Delegates last December in St. Louis. There can be no doubt that the great majority of the profession realize the necessity of a vigorous publicity campaign to acquaint the public with the importance of preserving the private practice of medicine and the extension of voluntary insurance to provide for the cost of hospital and medical care, rather than to place medical care under bureaucratic control by means of compulsory government taxation. The funds raised by the twenty-five dollar assessment will be used in large part for this publicity. It is not being used for a lobby in Washington, and this repeated accusation has been denied from the start.

The protest against the present attitudes and policies of the AMA in regard to the problem of medical care with the list of signees of the protest was published in the *Journal* AMA, February 19, 1949 (page 532). The reply by the officers and trustees of the Association also appears. A careful reading of the protest and reply indicate that the signers were not acquainted with the purpose of the assessment or the program of the AMA for the advancement of medicine and public health. At a time when it is essential that the medical profession present a united front in opposition to the proponents of complete socialization of the practice of medicine, this protest is most unfortunate.

The program of the AMA for the advancement of medicine and public health† does not consist entirely of opposition to bureaucratic administration of medical care as typified by the Wagner-Murray-Dingell Bill. It contains positive objectives which have been approved by the House of Delegates of the AMA.

†See pages 477-478 this issue.

RELATIVE VALUES

THE total number of persons now covered by all voluntary agencies is 55,000,000 for hospitalization and 37,000,000 for surgical or medical care. Of these, over 30,000,000 people are covered by Blue Cross type hospital insurance and over 10,000,000 by Blue Shield type medical care in-

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MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

TRUMAN OPEN TO HEALTH COMPROMISE

President Truman has indicated that he will settle for less in the matter of national health programs.

In heralding the introduction of the Administration bill for compulsory health insurance, Mr. Truman was less specific than he had been a year ago when he was quoting costs and benefits. This time he said nothing about how the new plan would be financed, admitting only that it would be "costly," and hastily qualifying that statement with the assertion that the program would actually save more than it cost.

Truman Defensive

The chief executive was apparently on the defensive about his health scheme, for his statement was concerned largely with attempts to refute the charges that such a tax-paid, government-supervised program would result in socialization, soaring costs and lowered quality of medical care.

He protested that the United States plan would not be modeled after the British plan, that it would not entail a multiplicity of federal employes, that it would not deny patients the right of selecting their own doctors and hospitals, nor would it make doctors employes of the government.

More for Same Money

What it would do, he asserts, is get more care for the same amount of money (four per cent of the national income) that is now being spent for health.

To strengthen his argument that the rank and file of American citizens are unprepared for medical emergencies, Mr. Truman quoted a figure of 3,500,000 as representing the number of people having insurance which provides adequate health protection.

In a statement released for publication April 25, Dr. Elmer Henderson, chairman of the AMA Board of Trustees, said:

"Ten or fifteen years ago that was true. Today, Mr. President, 55,000,000 Americans are protected, under the voluntary health insurance systems of this country, against the costs of hospital care, and 37,000,000 policyholders are insured against surgical or medical bills.

More for Less Money

"Again, the President falls into the error of stating that only limited, inadequate health protection is available under the voluntary health insurance systems. Actually, the voluntary systems are providing better coverage today than any compulsory program yet proposed—at about half the price.

"President Truman also makes the amazing assertion that adequate medical care is now beyond the means of all but the upper income groups. On the contrary, any family which can afford a package of cigarettes a day, or a weekly movie, can afford the finest kind of pre-paid medical and hospital protection. The cost is about the same."

Sponsors of the legislation introduced it in the house and senate April 25. One of them, Senator Humphrey, was quoted as saying, "This is actually an economy program—probably the greatest economy program the government ever launched."

Congress Too Busy

Laudatory as they are about the bill, neither the sponsors nor President Truman indicate optimism about it passing this session. Congress, absorbed with other changes in the social security laws, a new farm program, military aid for Europe and ratification of the Atlantic pact, has exhibited little more than an academic interest in the proposal. Washington observers look for the real showdown this fall or next year.

In the meantime, the program has suffered some severe setbacks.

While President Truman was carefully timing

his oratory of transmittal to Congress, a number of groups were loosing counter-blasts:

*The same day, Daughters of the American Revolution adopted a strong resolution opposing Wagner-Murray-Dingell legislation.

*Senator Taft predicted that Truman's recommendation of "socialized medicine" would be emphatically rejected by Congress.

*Three important Catholic organizations: Bureau of Health and Hospitals of the National Catholic Welfare Conference, National Conference of Catholic Charities, and Catholic Hospital Association, issued a 20-page statement denouncing the national health insurance program and favoring, instead, a comprehensive voluntary plan along the lines of the Taft-Smith-Donnell Bill, S.1581.

Public Knows Socialism

In addition, the proponents of national health taxation, are becoming aware that the words "socialized medicine" are becoming inseparably linked with the plan.

Their only escape from this unpleasantly true label seems to be an attempt to apply it to other health proposals now pending in Congress. Senator Murray, on an NBC network broadcast April 22, attacked the Taft-Smith-Donnell Bill as a step toward "Soviet regimented medicine," amplifying what he had said a week before when the measure was introduced.

The American people are apprehensive about any plan that resembles regimentation, socialism or communism, and they will not endorse national compulsory health insurance as long as the same sales talk applies equally to compulsory health insurance and socialized medicine.

"Insurance" Misleading

Furthermore, the term "insurance" in connection with the compulsory health plan is being seen now in its true light, that of a misleading facade.

As the *Minneapolis Tribune* pointed out, editorially, April 23: "What Mr. Truman proposes, however, is not insurance at all . . . Insurance, as Senator Taft pointed out . . . is a free act by which a man agrees to pay a definite sum to receive protection or benefits worth approximately what he pays.

"If a man is compelled to pay something to the government he has to accept what the government gives him, or fails to give him."

MSMA HOLDS FIRST PRESS CONFERENCE

The first state-wide Medical Press Conference of the Minnesota State Medical Association has been established, by popular acclaim, as an annual event.

Held April 8, at the Hotel Radisson, the meeting drew nearly three hundred and fifty doctors and editors from all parts of the state. Announcements of the meeting had been heralded with great editorial interest, indicating that newspapermen were acutely aware of the need for better understanding between the two professions.

One newspaper, *The Montevideo News*, declared unhesitatingly, "Here is a sign of progress toward better public understanding, all around. The medical men and women have a great and good story to tell and to sell, but they have been incredibly backward in doing it."

"Too Many Misunderstandings"

This backwardness was admitted by Dr. E. M. Hammes, president of the MSMA, as he opened the afternoon discussion session by saying, "There have been far too many misunderstandings between us . . . on matters of news coverage and ethics, especially."

Dr. Hammes added that the question of socialized medicine is "of like concern to doctors and to editors and reporters, whose civic responsibilities certainly include the health level of their communities."

Citing the multiple-threat of socialized medicine, Dr. Hammes made clear the position of Minnesota doctors: "We're not asking you to fight our battle, but only to continue your own battle for freedom, so that our country will not fall prey to socialistic slavery."

The meeting was then signed over to the newspapermen and women to develop as they wished. Interesting discussions on a variety of problems relating to journalism and medicine and, consequently, to the public at large, resulted.

Russia Mid-Victorian

A 6:30 banquet was followed by two addresses: Irving Pflaum, foreign editor of the *Chicago Sun-Times*, relating his observations in Russia, referred to the iron curtain as a device for keeping Russians in, not for keeping others out of the country. He described Russia as mid-Victorian in its present living conditions and cited

the extreme poverty and hardships that exist there now.

John Bach, press relations director for the American Medical Association, analyzed the Ewing report in his talk entitled "Pick-Pocket Medicine," contrasting the advances in medical science under a system of private enterprise and the conditions that exist, medically speaking, in the countries where socialized medicine holds sway.

High point of the meeting for many who attended was the unscheduled appearance of Dr. Mitrofan Smorszczok, displaced physician from Russian-controlled Poland. Describing Communism as "a permanent crime against humanity," Dr. Smorszczok delineated his own experiences as a physician forced to take orders from the government.

More Smorszczok's Wanted

Editorial comment on Dr. Smorszczok was generally in line with what the *Ivanhoe Times* said: "As Dr. Smorszczok told briefly of his experiences under the Soviet thumb, we wished desperately that more parlor pinks in this free country of ours would abandon their pride in intellectual liberalism just long enough to give Dr. Smorszczok's message a fair hearing. We wished desperately that where there is but one Dr. Smorszczok and several Elmer Benson's and Henry Wallace's that somehow we could reverse the ratio."

Speaking for the Minnesota Editorial association about the Press Conference as a whole President Alan C. McIntosh of Luverne, wrote:

"Minnesota medical men have led in so many fields . . . I think that this Medical Press Conference will blaze a new trail toward better public relations. We enjoyed the hospitality extended . . . we appreciated the opportunity to learn more about your problems . . ."

Because an industrial environment is supposed to be dirty, grimy, and dusty, it has, out of ignorance, been accused of being an incubator for tuberculosis. Such thinking disregards vital components outside of the working environment of the employe, such as the economic factor, living conditions, congested housing, improper nutrition, financial insecurity with all its attendant worry, personal and community hygiene.—Rutherford T. Johnstone, M.D., *American Review of Tuberculosis,* October, 1948.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

J. F. Du Bois, M.D., Secretary

230 Lowry Medical Arts Building

St. Paul 2, Minnesota

Minneapolis Beauty Shop Owner Pleads Guilty to Abortion

Re: State of Minnesota vs. Louis Stanley Jensen.

On April 7, 1949, Louis Stanley Jensen, fifty-three years of age, 1707 Stevens Avenue, Minneapolis, was sentenced by the Hon. John A. Weeks, Judge of the District Court, to a term of not to exceed four years in the State Prison at Stillwater, following the defendant's plea of guilty on March 17, 1949, to an information charging him with the crime of abortion. Judge Weeks stayed the sentence and placed the defendant on probation for three years. Jensen operates the Jensen Salon of Beauty on the ground floor of the Foshay Tower Building, Minneapolis.

Jensen was arrested on March 15, 1949, following a complaint to the Minnesota State Board of Medical Examiners on February 28, 1949, that he was engaged in performing abortions. While the matter was under investigation, a similar complaint in another case was made to the office of Mr. Michael J. Dillon, County Attorney of Hennepin County. Accordingly, on March 15, Jensen was arrested and a complaint filed on March 16, charging him with the crime of abortion performed on a twenty-one-year-old unmarried St. Louis Park girl. On March 17, Jensen entered a plea of guilty in the District Court of Hennepin County. Jensen admitted that he had performed five or six abortions during the past five years. Jensen injected an alum solution into the uterus to bring about the abortion. The defendant stated that he made no charge for his services, and the evidence indicated that his statement was correct in that regard. Jensen stated to the Court that he was born in Albert Lea, Minnesota, and attended grade school in Minneapolis.

RELATIVE VALUES

(Continued from Page 506)

surance. The medical and surgical care coverage is growing by leaps and bounds, even faster than was the experience of the Blue Cross. These facts should be a potent argument against adoption of a compulsory government-supplied medical care and the scrapping of all the hospital and medical insurance policies now in effect.

When one considers that both a hospital and medical care policy can be obtained for the price of a package of cigarettes a day or a movie a week for the family, arguments as to the inability of the public to pay for the cost of sickness seem rather ridiculous.

Minnesota Academy of Medicine

Meeting of January 12, 1949

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, January 12, 1949. Dinner was served at 7 o'clock and the meeting was called to order at 8:10 p.m. by the President, Dr. T. A. Peppard.

There were sixty-one members and one visitor present.

This being the Annual Presidents' Dinner, no business was transacted.

Dr. S. E. Sweitzer, as chairman of the meeting, introduced the Past Presidents who were present. These were: Drs. Ulrich, Hynes, LaVake, Jones, Drake, Johnson, Wilcox, Nordland, Zimmermann, Schulze, Hammes, and Peppard—retiring president. Dr. Lepak, president for 1949, was also introduced. The past president responded briefly.

MISTAKES IN DIAGNOSIS

T. A. PEPPARD, M.D.
Minneapolis, Minnesota

Dr. Peppard, Minneapolis, gave his address as retiring president. Lantern slides of charts were shown.

Abstract

The belief that mistakes carry real teaching value led me to review and analyze the records, selected from my files quite at random, of 100 patients who had come to autopsy. There were fifty-seven males and forty-three females seen from 1916 to 1944. Their ages ranged from eleven to ninety-two years: 20 per cent in each of the fifth, sixth, seventh and eighth decades. Approximately half of the patients were seen by one or more physicians other than myself.

Chart 1 illustrates the manner of arrangement used in summarizing each of the records. The clinical findings as they appeared in writing only were listed on the left and on the right was a corresponding list of the findings as determined by the pathologist. Whenever any question whatever arose, an error was charged so that bias could and would not favorably influence the results. In the illustrated case the provisional diagnosis of atypical pneumonia (though qualified) constituted an error and that of pulmonary infarction was counted as correct though qualified. The autopsy findings showed that there was cardiac hypertrophy, the heart weight being 400 grams, pulmonary edema, and moderate benign prostatic hypertrophy. In regard to the first, I had considered the percussion borders of the heart's dullness to be normal for this patient who was of broad habitus and the roentgen examination had showed findings reported as indicating the heart to be normal in size, shape and position. The second, pulmonary edema, was unquestionably a terminal event; and the third, prostatic hypertrophy, had been missed because no rectal examination had been made in this patient dying of coronary artery occlusion and myocardial infarction. Years before such examination had recorded normal findings and now no symptoms gave evidence of any abnormality. In this record then

STO - MALE - age 54

CLINICAL	AUTOPSY
1. Arteriosclerosis	1. Arteriosclerosis of Aorta
2. Coronary Artery Sclerosis	2. Coronary Artery Sclerosis
3. Coronary Artery Thrombosis	3. Coronary Artery Thrombosis - Rt. & Left
4. Myocardial Infarction	4. Myocardial Infarction
5. Congestive Heart Failure	5. Congestive Heart Failure
6. Atypical Pneumonia or Pulmonary Infarction	6. Pulmonary Infarction
7. Pulmonary Congestion	7. Pulmonary Congestion
8. Congestion of Liver	8. Congestion of Liver
9. Hernia (Rt. Inguinal)	9. Hernia (Rt. Inguinal)
	10. Cardiac Hypertrophy (400 gm)
	11. Pulmonary Edema
	12. Benign Prostatic Hypertrophy

Chart 1.

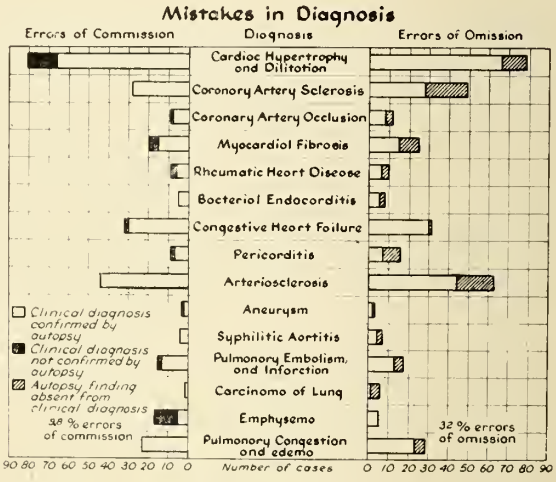


Chart 2.

there appear nine correct clinical diognoses, one of which was qualified and one erroneous diagnosis (also qualified). In the pathological study, there were likewise nine correct diagnoses and three findings that had been neglected.

After thus reviewing the entire 100 records, charts were prepared showing on the left errors of commission, and on the right errors of omission. The graph is in error in that fifteen mistakes of commission are shown in regard to cardiac hypertrophy and dilatation, when, in fact, the correct number was thirteen. Not shown on the chart, but included in the total figures, were thirty-five correct diagnoses of various conditions; three errors of commission and twenty errors of omission. The complete summary shows, among a total of 614 items: errors of omission 32 per cent; errors of commission 9.8 per cent.

Any possible value of this review lies in the discovery of reasons (never excuses) for the errors. Scrutiny of each mistake has led me to classify them as shown in Chart 4. Naturally there is some, even much, overlapping in the various divisions. The faculty of judgment will always be a variable factor in various individuals and no doubt will vary in the same person from time to time according to his training, experience, and breadth and depth of wisdom. If evidence is sought and not found, and if our examinations are incomplete, even if some legitimate reason exists for our inability to ascertain the fact, our concept must necessarily be incomplete and errors will be inevitable.

Those in division 5 (12.5 per cent), those in division 4 (8.9 per cent), and those in sub-group 2 (lack of re-examination) in division 3 (5.3 per cent), or something over a fourth (26.7 per cent) of the errors, with care and diligence can readily be obviated.

"He who has never erred in his diagnosis has not really practised medicine."

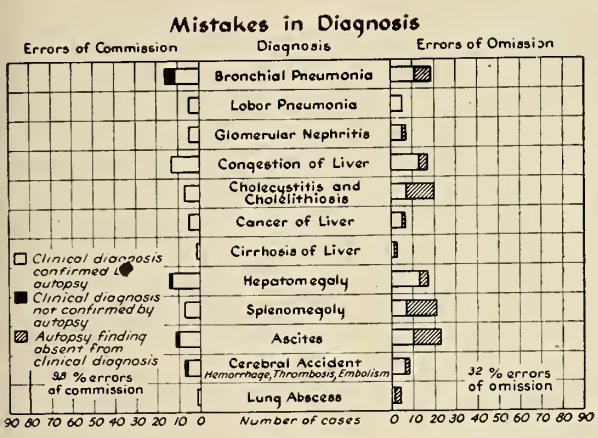


Chart 3.

MISTAKES IN DIAGNOSIS

1. Error in Judgment - including all those listed as errors of commission; misinterpretation of signs		28.5%
2. No Evidence - Symptoms and / or signs not obtained		29.2%
3. Examination - Examination incomplete; nothing to suggest that some special procedure be undertaken; patient's condition preventing some particular examination	10%)	
Lack of Re-examination	5.3%)	
Death occurring within 24 hours or less - patisnt's condition prevsnting proper thorough examination	5.3%)	20.6%
4. Diverted Attention - Some lesion of such prominence (usually that causing death) that little or no attention was given anything else - not following through even though thsre was some suggestive evidence		8.9%
5. Gross Error in Recording Diagnosis	4.2%)	
Neglecting the obvious	8.2%)	12.5%

Chart 4.

Discussion

Dr. H. L. Ulrich, Minneapolis: This is an extremely interesting paper and also is a labor of love. Dr. Peppard is a meticulous diagnostician and I want to thank him for presenting it this evening. I am glad he mentioned Dr. Robert Robertson's (deceased) paper on autohypnosis in diagnosis. This failing is prevalent in all of us, particularly the surgeons.

It takes courage to call attention to our mistakes as measured by the postmortem yardstick. We can console ourselves with the knowledge that even the pathologist at times is bewildered. I want to congratulate Dr. Peppard for his excellent presentation.

The meeting was adjourned.

A. E. Cardle, *Secretary*

TIME TO STAND UP AND BE COUNTED!

There have been a few instances recently in which medical organizations, particularly scientific groups, have indicated reluctance to go on record against Compulsory Health Insurance on the ground of propriety.

The question raised is whether a scientific group should "get mixed up in politics."

The answer to that question is that we *are* "mixed up in politics" whether we like it or not, because medicine has been brought under political attack.

The only question which remains is whether we are going to defend our profession against that political attack—and how we can do it most effectively.

If Compulsory Health Insurance is enacted, every medical organization will be subject to political controls and influence—and every doctor will be restricted in the practice of his profession. Then we really will be "mixed up in politics"!

That issue, we believe, makes it imperative that all medical organizations—scientific or otherwise—take their stand, publicly and vigorously, against the emasculation of sound medical practice.

American medicine needs to present a united front against politically controlled medical practice—and we believe it is not only ethical, but highly desirable for our scientific groups to make their position known.

Let's stand up and be counted!

—George F. Lull, M.D., General Manager
American Medical Association

Minnesota State Medical Association

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R.H. Kath, M.D. ..... Wood Lake
E. R. Hudec, M.D. ..... Echo
Paul Schmidt, M.D. ..... Granite Falls
M. I. Hauge, M.D. ..... Clarkfield

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Counties—Dodge, Fillmore, Freeborn, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha, Winona.

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Counties—Cottonwood, Faribault, Jackson, Martin, Murray, Nobles, Pipestone, Rock.

DISTRICT NO. 3

L. G. Smith, M.D. ..... Montevideo
Counties—Big Stone, Brown, Chippewa, Kandiyohi, Lac Qui Parle, Lincoln, Lyon, Meeker, Pope, Redwood, Stevens, Swift, Traverse, Yellow Medicine, Watonwan.

DISTRICT NO. 4

H. J. Nilson, M.D. ..... North Mankato
Counties—Blue Earth, Carver, Le Sueur, McLeod, Nicollet, Renville, Scott, Sibley, Waseca.

DISTRICT NO. 5

Justus Ohage, M.D. ..... Saint Paul
Counties—Anoka, Chisago, Dakota, Isanti, Kanabec, Mille Lacs, Pine, Ramsey, Sherburne, Washington.

DISTRICT NO. 6

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Counties—Hennepin, Wright.

DISTRICT NO. 7

W. W. Will, M.D. ..... Bertha
Counties—Aitkin, Beltrami, Benton, Cass, Clearwater, Crow Wing, Hubbard, Koochiching, Morrison, Stearns, Todd, Wadena.

DISTRICT NO. 8

W. L. Burnap, M.D. ..... Fergus Falls
Counties—Becker, Clay, Douglas, Grant, Kittson, Lake of the Woods, Mahnomen, Marshall, Norman, Otter Tail, Pennington, Polk, Red Lake, Roseau, Wilkin.

DISTRICT NO. 9

A. O. Swenson, M.D. ..... Duluth
Counties—Carlton, Cook, Itasca, Lake, St. Louis.

Woman's Auxiliary to the Minnesota State Medical Association

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County Society Roster

Key to Symbols: *Deceased; † Affiliate, Associate or Life Member; ‡ In Service; §Wife is Member of Woman's Auxiliary.

BLUE EARTH COUNTY MEDICAL SOCIETY

Regular meetings, last Monday of each month
Annual meeting in May
Number of Members: 43

President
Schmitz, A. A. ..... Mankato

Secretary
Jones, O. H. ..... Mankato

§Andrews, R. N. ..... Mankato
Batdorf, B. N. ..... Good Thunder
§Butzer, J. A. ..... Mankato
§†Dahl, G. A. ..... Mankato
§Denman, A. V. ..... Mankato
†Edwards, R. T. ..... Columbus, Ohio
§Franchere, F. W. ..... Lake Crystal
§Fugina, G. R. ..... Mankato
§Haes, J. E. ..... Mankato
Hankerson, R. G. ..... Minnesota Lake
§Hassett, R. G. ..... Mankato
§Hoeper, P. G. ..... Mankato
§Howard, E. G. ..... Mapleton
§Howard, M. I. ..... Mankato
§Huffington, H. L. ..... Mankato
§Jones, O. H. ..... Mankato
§Juliar, R. O. ..... St. Clair
§Kaufman, W. B. ..... Mankato
§Kearney, R. W. ..... Mankato
§Keil, M. A. ..... Mankato
§Kemp, A. F. ..... Mankato
§Koenigsberger, Chas. ..... Mankato
§Krieser, A. E. ..... Mankato
Langhoff, A. H. ..... Mankato
Liedloff, A. G. ..... Mankato
Luck, Hilda ..... Mankato
§Macklin, W. E. ..... Mankato
§Mickelson, J. C. ..... Mankato
§Miller, V. I. ..... Mankato
§Morgan, H. O. ..... Amboy
§Penn, G. E. ..... Mankato
§Samuelson, L. G. ..... Mankato
§*Schlesselman, J. T. ..... Mankato
†Schmidt, P. A. ..... Monroe, Oregon
§Schmitz, A. A. ..... Mankato
§Sjoding, J. D. ..... Mankato
§Smith, P. M. ..... Lake Crystal
§Sohmer, A. E. ..... Mankato
§Stillwell, W. C. ..... Mankato
§Troost, H. B. ..... Mankato
§Vezina, J. C. ..... Mapleton
Von Drasek, J. ..... Mankato
§Wentworth, A. J. ..... Mankato
Williams, H. O. ..... Lake Crystal

BLUE EARTH VALLEY MEDICAL SOCIETY

Faribault and Martin Counties
Regular meetings, first Thursday of month
Annual meeting, first Thursday in November
Number of Members: 35

President
Hunt, R. S. ..... Fairmont

Secretary
Boysen, Herbert ..... Madelia

§Armstrong, R. S. ..... Winnebago
§Bailey, R. B. ..... Fairmont
Barr, W. H. ..... Wells
§Boysen, Herbert ..... Madelia
§Burmeister, R. O. ..... Welcome
§Chambers, W. C. ..... Blue Earth
Cooper, M.D. ..... Winnebago
§Drexler, G. W. ..... Blue Earth
†Farrish, R. C. ..... Sherburn
§Gardner, V. H. ..... Fairmont
§Grogan, J. M. ..... Ceylon
Hanson, Lewis ..... Frost
§Heimark, J. J. ..... Fairmont
†Holm, P. F. ..... Wells
§Hunt, R. C. ..... Fairmont
§Hunt, R. S. ..... Fairmont
Hunte, A. F. ..... California
§Krause, C. W. ..... Fairmont
McGroarty, J. J. ..... Easton
§Medlin, C. F. ..... Truman
Mills, J. L. ..... Winnebago
Parsons, R. L. ..... Monterey
§Rollins, T. G. ..... Elmore
Rowe, W. H. ..... Fairmont
§Russ, H. H. ..... Blue Earth
§Shragg, Harry ..... Elmore
§Snyder, C. D. ..... Kiester
§Thayer, E. A. ..... Fairmont
Vaughan, V. M. ..... Truman
§Virnig, M. P. ..... Wells
§Virnig, R. P. ..... Wells
§Wandke, Otto E. ..... Fairmont
Wenzel, R. E. ..... Blue Earth
Wilson, C. E. ..... Blue Earth
§Zemke, E. E. ..... Fairmont

BROWN-REDWOOD-WATONWAN COUNTY

Regular meetings quarterly
Annual meeting, May
Number of Members: 35

President
Gibbons, F. C. ..... Comfrey

Secretary
Fesenmaier, O. B. ..... New Ulm

Benton, Paul C. ..... St. Paul
Bergman, O. B. ..... St. James
Black, W. A. ..... New Ulm
Bratrude, E. J. ..... St. James
Bregel, F. L. ..... St. James
§Cairns, R. J. ..... Redwood Falls
Coulter, H. E. ..... Madelia
§Dubbe, F. H. ..... New Ulm
§Dysterheft, A. F. ..... Gaylord
Esser, O. J. ..... New Ulm
§Fesenmaier, O. B. ..... New Ulm
§Fritsche, Albert ..... New Ulm
§Fritsche, C. J. ..... New Ulm
§Fritsche, T. R. ..... New Ulm
§Gibbons, F. C. ..... Comfrey
Glaeser, J. H. ..... Gibbon
Goblirsch, A. P. ..... Sleepy Eye
§Hovde, Rolf ..... Winthrop
Just, H. J. ..... Hastings
§Keithahn, E. E. ..... Sleepy Eye
§Kruzick, S. J. ..... Sleepy Eye
§Kusske, A. L. ..... New Ulm
Kusske, B. W. ..... New Ulm
§Nelson, Glen ..... Fairfax
Nuessle, W. G. ..... Springfield
§Penk, E. L. ..... Springfield
Peterson, R. A. ..... Vesta
§†Reineke, G. F. ..... New Ulm
§Saffert, C. A. ..... New Ulm
§Schroeppel, J. E. ..... Winthrop
§Seifert, O. J. ..... New Ulm
Theim, C. E. ..... St. Paul
§Vogel, H. A. L. ..... New Ulm
§Wohlrabe, E. J. ..... Springfield
Yaeger, J. J. ..... Redwood Falls

CAMP RELEASE MEDICAL SOCIETY

Chippewa, Lac Qui Parle and Yellow Medicine Counties
Regular meetings monthly
Annual meeting, December
Number of Members: 28

President
Lundell, C. L. ..... Granite Falls

Secretary
Johnson, V. M. ..... Dawson

Andrejek, A. R. ..... Madison
*Bergh, L. N. ..... Montevideo
Boody, G. J., Jr. ..... Dawson
Burns, F. M. ..... Milan
Burns, M. A. ..... Milan
Guilbert, G. D. ..... Wood, Wis.
Hartfiel, H. A. ..... Montevideo
§Hauge, M. I. ..... Clarkfield
Holmberg, L. J. ..... Canby
Hudec, E. R. ..... Echo
§Johnson, V. M. ..... Dawson
†Jordan, Kathleen ..... Granite Falls
Jordan, L. S. ..... Granite Falls
§Kath, R. H. ..... Wood Lake
Kaufman, W. C. ..... Appleton
Kraemer, George ..... Canby
Krystosek, Lee A. ..... Clara City
†Larson, P. G. ..... Cleveland, Ohio
Lee, W. N. ..... Madison
*Lima, L. R. ..... Montevideo
Lima, L. R., Jr. ..... Montevideo
Lundell, C. L. ..... Granite Falls
§Nelson, M. S. ..... Granite Falls
Owens, W. A. ..... Montevideo
Pertl, A. L. ..... Canby
§Roust, H. A. ..... Montevideo
§Schmidt, P. G., Jr. ..... Granite Falls
§Smith, L. G. ..... Montevideo
§Westby, Magnus ..... Madison
Westby, Nels. ..... Madison

CLAY-BECKER COUNTY MEDICAL SOCIETY

Regular meetings quarterly
Annual meeting, December
Number of Members: 27

President
Otto, H. C. ..... Frazee

Secretary
Hendrickson, R. R. ..... Lake Park

†Aborn, W. H. ..... Hawley
§Bloemendaal, E. J. G. ..... Lake Park
§Boisclair, Thomas G. .... Detroit Lakes
Bottolfson, B. T. ..... Moorhead
§Bourget, G. E. ..... Detroit Lakes
Carman, J. E. ..... Detroit Lakes
§Dodds, Wm. C. ..... Detroit Lakes
§Duncan, J. W. ..... Moorhead
Ellingson, A. R. ..... Detroit Lakes
Hagen, O. J. ..... Moorhead
§Haight, G. G. ..... Audubon
§Hendrickson, R. R. ..... Lake Park
Humphrey, E. W. ..... Moorhead
Ingebrigtson, E. K. ..... Moorhead
Johnson, Olga H. ..... Moorhead
§Larson, Arnold ..... Detroit Lakes
§Moberg, C. W. ..... Detroit Lakes
Moe, A. E. ..... Moorhead
§Oliver, James ..... Moorhead
§Otto, H. C. ..... Frazee
§Rutledge, L. H. ..... Detroit Lakes
Saxman, Gertrude Olson .. Georgetown
§Seitz, S. B. ..... Barnesville
Shaw, H. A. ..... Minneapolis
§Simison, Carl ..... Barnesville
Thysell, F. A. ..... Moorhead
§Thysell, V. D. ..... Hawley

EAST CENTRAL MINNESOTA MEDICAL SOCIETY

Anoka, Chisago, Isanti, Kanabec, Mille Lacs, Pine and Sherburne Counties
Regular meetings, February, April, June, August, October, December
Annual meeting, December
Number of Members: 40

President
Nygren, W. T. ..... Braham

Secretary
Roehlke, A. B. ..... Elk River

Albrecht, H. H. ..... Chisago City
Arends, A. L. ..... Moose Lake
Avrick, A. M. ..... Onamia
Berge, H. L. ..... Mora
Beyer, E. F. ..... Braham
§Blomberg, W. R. ..... Princeton
Bossert, C. S. ..... Mora
§Bunker, B. W. ..... Anoka
Burns, H. A. ..... Anoka
Clothier, E. F. ..... Elk River
†Dedolph, T. H. ..... Minneapolis
Dredge, H. P. ..... Sandstone
§Gully, R. J. ..... Cambridge
Halpin, J. E. ..... Rush City
§Hedenstrom, L. H. ..... Cambridge
Holmes, A. E. ..... Rush City
Hubin, E. G. ..... Sandstone
Kapsner, A. T. ..... Princeton
Langby, F. A. ..... Minneapolis
§McManus, W. F. ..... Princeton
§Miller, E. W. ..... Anoka
§Nordman, W. F. ..... Mora
Nygren, W. T. ..... Braham
§O'Hanlon, J. A. ..... Lindstrom
Peterson, C. A. ..... Minneapolis
§Petersen, P. C. ..... Mora
§Riegel, G. S. ..... Taylors Falls
§Roehlke, A. B. ..... Elk River
Sather, R. N. ..... Mora
Schlesselman, George ..... Anoka
§Sherman, H. T. ..... Cambridge
Spurzem, R. J. ..... Anoka
Stephan, E. L. ..... Hinckley
§Stratte, A. K. ..... Pine City
§Swensen, R. G. ..... North Branch
§Tesch, G. H. ..... Elk River
Trommald, Gladys ..... Anoka
Vik, Melvin ..... Onamia
Waller, J. D. ..... Pine City
§Whitney, Richard ..... Princeton

FREEBORN COUNTY MEDICAL SOCIETY

Regular meetings quarterly
Annual meeting, December
Number of Members: 27

President
Whitson, S. A. ..... Albert Lea

Secretary
Palmerton, E. S. ..... Albert Lea

§Barr, L. C. ..... Albert Lea
§Butturff, C. R. ..... Freeborn
§Calhoun, F. W. ..... Albert Lea
§Demo, Robert A. ..... Albert Lea
§Donovan, D. L. ..... Albert Lea
Egge, S. G. ..... Albert Lea
§Erdal, O. A. ..... Albert Lea
§Folken, F. G. ..... Albert Lea
Freeman, J. P. ..... Glenville
§Freligh, W. P. ..... Albert Lea
†Gullixson, A. ..... Albert Lea
§Hansen, T. M. ..... Albert Lea
Kaasa, L. J. ..... Albert Lea
Leopard, B. A. ..... Albert Lea
§Neel, H. B. ..... Albert Lea
§Nelson, Clayton E. J. ..... Albert Lea
§Nesheim, M. O. ..... Emmons
§Palmer, C. F. ..... Albert Lea
Palmer, W. L. ..... Albert Lea
§Palmerton, E. S. ..... Albert Lea
§Person, J. P. ..... Albert Lea
§Prins, L. R. ..... Albert Lea
§Rechlitz, E. T. ..... Albert Lea
Schmidt, R. F. ..... Alden
§Schultz, J. A. ..... Albert Lea
§Steiner, L. E. ..... Albert Lea
§Whitson, S. A. ..... Albert Lea

GOODHUE COUNTY MEDICAL SOCIETY

Regular meetings, none
Annual meeting, December
Number of Members: 30

President
Bagby, G. W. ..... Cannon Falls

Secretary
§Brusegard, J. F. ..... Red Wing

Aanes, A. M. ..... Red Wing
§Akins, W. M. ..... Red Wing
§Anderson, S. H. ..... Red Wing
Bagby, G. W. ..... Cannon Falls
§Brusegard, J. F. ..... Red Wing
Claydon, H. F. ..... Red Wing
†Claydon, L. E. ..... Red Wing
Flom, M. G. ..... Zumbrota
§Graves, R. B. ..... Red Wing
§Hartnagel, G. F. ..... Red Wing
§Hedin, R. F. ..... Red Wing
Johnson, A. E. ..... Minneapolis
†Jones, A. W. ..... Red Wing
§Juers, E. H. ..... Red Wing
§Kimmel, G. C. ..... Red Wing
§Larson, O. E. ..... Zumbrota
§Liffrig, W. W. ..... Red Wing
Mack, J. J. ..... Little Rock, Ark.
§Maertz, R. W. ..... Goodhue
Maunder, J. B. ..... Detroit, Mich.
§McGuigan, H. T. ..... Red Wing
§Miller, W. R. ..... Red Wing
Odessky, Louis .... Augusta, Georgia
§Pfuetze, K. H. ..... Cannon Falls
§Reitmann, J. H. ..... Hastings
§Sherman, R. V. ..... Red Wing
†Smith, M. W. ..... Red Wing
§Steffens, L. A. ..... Red Wing
§Williams, M. R. ..... Cannon Falls
§Wasmund, C. W. ..... Red Wing

HENNEPIN COUNTY MEDICAL SOCIETY

Regular meetings, first Monday each month, October through May
Annual meeting, October
Number of Members: 785

President
Anderson, E. D. ..... Minneapolis

Secretary
Aling, Chas. A. ..... Minneapolis

Executive Secretary
Thomas P. Cook ..... Minneapolis

§Aagaard, G. N., Jr. ..... Minneapolis
§Abramson, Milton ..... Minneapolis
†Adkins, C. D. ..... Minneapolis
Ahern, E. E. ..... Minneapolis
Alexander, H. A. ..... Minneapolis
Alger, E. W. ..... Minneapolis
§Aling, C. A. ..... Minneapolis
§Altnow, H. O. ..... Minneapolis
§Andersen, S. C. ..... Minneapolis
§Anderson, D. D. ..... Minneapolis
§Anderson, E. D. ..... Minneapolis
§Anderson, E. R. ..... Minneapolis
§*Anderson, Frank J. .... Minneapolis
Anderson, H. R. ..... Minneapolis
§Anderson, J. J. ..... Minneapolis
§Anderson, J. K. ..... Minneapolis
§Anderson, K. W. ..... Minneapolis
Anderson, Margaret C. .... Minneapolis
§Anderson, U. S. ..... Minneapolis
Anderson, W. T. ..... Minneapolis
Andreassen, E. C. ..... Minneapolis
Andresen, K. D. ..... Minneapolis
§Andrews, R. S. ..... Minneapolis
§Arey, S. L. ..... Minneapolis
§Arlander, C. E. ..... Minneapolis
§Arling, L. S. ..... Minneapolis
Arnold, Ann W. ..... Minneapolis
Arnold, D. C. ..... Minneapolis
§Arvidson, C. G. ..... Minneapolis
§Aune, Martin ..... Minneapolis
†Aurand, W. H. ..... Minneapolis
§Baird, J. W. ..... Minneapolis
§Baken, M. P. ..... Minneapolis
Baker, A. B. ..... Minneapolis
Baker, A. T. ..... Minneapolis
§Baker, E. L. ..... Minneapolis
†Baker, Looe ..... Minneapolis
§Balkin, S. G. ..... Minneapolis
Bank, Edward W. ..... Minneapolis
Bank, H. E. ..... Portland, Oregon
†Barber, J. P. ..... Minneapolis
Baronofsky, Ivan D. ..... Minneapolis
Barr, R. N. ..... Minneapolis
§Barron, Moses ..... Minneapolis
Bateman, Olive A. L. ..... Rochester
§†Baxter, S. H. ..... Minneapolis
§*Bayard, H. F. ..... Minneapolis

§Beach, Northrop.....Minneapolis
†Beard, A. H.....Minneapolis
†Beckman, W. G. .....Palo Alto, Calif.
§Bedford, E. W.....Minneapolis
§Beiswanger, R. H.....Minneapolis
†Bell, E. T.....Minneapolis
§Bellville, T. P.....Minneapolis
§Belzer, M. S.....Minneapolis
Benesh, L. A.....Minneapolis
§Benjamin, A. E.....Minneapolis
§Benjamin, E. G.....Minneapolis
§Benjamin, H. G.....Minneapolis
§†Benn, F. G.....Minneapolis
Berger, A. G.....Minneapolis
§Bergh, G. S.....Minneapolis
Bergh, Solveig M. .....Minneapolis
§Berkwitz, N. J.:.....Minneapolis
§Berman, Reuben.....Minneapolis
§Bessesen, A. N., Jr.....Minneapolis
§Bessesen, D. H.....Minneapolis
Bessesen, W. A.....Minneapolis
Bieter, R. N.....Minneapolis
§Blake, Alan.....Hopkins
†Blake, James .....Hopkins
§Blake, J. A.....Hopkins
†Blake, P. S. .....Minneapolis
§Bloedel, T. J.....Osseo
Blumenthal, J. S.....Minneapolis
Bockman, M. W. H.....Minneapolis
§Boehrer, J. J.....Minneapolis
§Boies, L. R.....Minneapolis
†Booth, A. E.....Minneapolis
Borden, Craig W. .....Minneapolis
§Boreen, C. A.....Minneapolis
§Borgeson, E. J.....Minneapolis
§Borman, C. N.....Minneapolis
†Borowicz, L. A. .....Minneapolis
§Bowers, G. G.....Minneapolis
Boynton, Ruth E.....Minneapolis
§Bratrud, A. F.....Minneapolis
§Brekke, H. J.....Minneapolis
Brill, Alice K.....Minneapolis
Brooks, C. N.....Minneapolis
†Brown, E. D.....Paynesville
§Brown, J. R.....Minneapolis
†Brown, S. P.....Minneapolis
Brown, W. D.....Minneapolis
Brutsch, G. C.....Minneapolis
§Buchstein, H. F.....Minneapolis
§Buirge, Raymond.....Minneapolis
Bulkley, Kenneth.....Minneapolis
§Burnham, W. H.....Minneapolis
Bushard, W. J.....Minneapolis
§Buzzelle, L. K.....Minneapolis
§Cable, M. L.....Minneapolis
§Cabot, C. M.....Minneapolis
§Cabot, V. S.....Minneapolis
Cady, L. H.....Minneapolis
Callerstrom, G. W.....Minneapolis
Cameron, Isabell L.....Minneapolis
Camp, W. E.....Minneapolis
Campbell, L. M.....Minneapolis
§Campbell, O. J.....Minneapolis
Caplan, Leslie .....Minneapolis
§Cardle, A. E.....Minneapolis
§Carey, J. B.....Minneapolis
§Carlson, Lawrence.....Minneapolis
§Carlson, L. T.....Minneapolis
§Caron, R. P.....Minneapolis
Carter, H. Gray .....Minneapolis
§Caspers, C. G.....Minneapolis
§Cavanor, F. T.....Minneapolis
§Ceder, E. T.....Minneapolis
§Challman, S. A.....Minneapolis
§Chapman, C. B.....Minneapolis
Chesley, A. J.....Minneapolis
§Chisholm, T. C. .....Minneapolis
§Christenson, G. R.....Minneapolis
§Christianson, H. W.....Minneapolis
Clarke, E. K.....Minneapolis
§Clay, L. B.....Minneapolis
Cochrane, R. F.....Minneapolis
Cohen, B. A.....Minneapolis
Cohen, E. B.....Minneapolis
§Cohen, S. S.....Oak Terrace
Condit, W. H. .....Minneapolis
Cooper, J. P. .....Excelsior
§Corbett, J. F.....Minneapolis
Corniea, A. D.....Minneapolis
§Correa, D. H.....Minneapolis
§Cowan, D. W.....Minneapolis
Cowan, G. M. .....Minneapolis
§Cranmer, R. R.....Minneapolis
Cranston, R. W. .....Minneapolis
§Creevy, C. D.....Minneapolis
§Creighton, R. H.....Minneapolis
§Culligan, L. C.....Minneapolis
§Culmer, C. U.....Minneapolis
Cumming, H. A. ..Phoenix, Arizona
Cutts, George.....Minneapolis
Dady, E. E.....Minneapolis
§Dahl, E. O.....Minneapolis
§Dahl, J. A.....Minneapolis
§Daniel, D. H.....Minneapolis
§Dargay, C. P.....Minneapolis

§Davis, J. C.....Minneapolis
§Davis, W. I.....Mound
§del Plaine, C. W.....Minneapolis
Dennis, Clarence.....Minneapolis
§Devereaux, T. J.....Wayzata
§Diehl, H. S.....Minneapolis
Diessner, H. D.....Minneapolis
§Dorge, R. I.....Minneapolis
§Dornblaser, H. B.....Minneapolis
§Dorsey, G. C.....Minneapolis
Dowidat, R. W.....Minneapolis
Doxey, G. L.....Minneapolis
§Doyle, L. O.....Minneapolis
§Drake, C. R.....Minneapolis
Dredge, T. E. .....Minneapolis
§Drill, H. E.....Hopkins
§Duff, E. R.....Minneapolis
§Dukelow, D. A. .....Glen Ellyn, Ill.
†Dumas, A. G.....Minneapolis
§Dunlap, E. H.....Minneapolis
§Dunn, G. R.....Minneapolis
§Dupont, J. A.....Excelsior
§Duryea, W. M.....Minneapolis
†Dutton, C. E.....Minneapolis
§Dvorak, B. A.....Minneapolis
§Dwan, P. F.....Minneapolis
§Dworsky, S. D.....Minneapolis
Ebert, R. V.....Minneapolis
Eckles, Nylene .....Minneapolis
§Ehrenberg, C. J.....Minneapolis
§Ehrlich, S. P.....Minneapolis
§Eich, Matthew.....Minneapolis
Eisenstadt, D. H.....Minneapolis
§Eisenstadt, W. S.....Minneapolis
§Eitel, G. D.....Minneapolis
§Ellison, D. E.....Minneapolis
§Engelhart, P. C.....Minneapolis
§†Englund, E. E.....Minneapolis
§Engstrand, O. J.....Minneapolis
§Erickson, C. O.....Minneapolis
§Erickson, R. F.....Minneapolis
§Ericson, R. M.....Minneapolis
§Evans, E. T.....Minneapolis
Evans, R. D.....Minneapolis
Fahr, G. E.....Minneapolis
§Fansler, W. A.....Minneapolis
Feeney, J. M.....Minneapolis
§Feinstein, J. Y.....Minneapolis
Fenger, E. P. K.....Oak Terrace
§Fingerman, D. L.....Minneapolis
§Fink, L. W.....Minneapolis
§Fink, W. H.....Minneapolis
Fisher, I. I. .....Minneapolis
†Fitzgerald, D. F.....Minneapolis
§Fjeldstad, C. A.....Minneapolis
§Fleeson, W. H.....Minneapolis
†Fleming, A. S. .....Minneapolis
Fleming, D. S. .....Minneapolis
§Foker, L. W.....Minneapolis
§Folsom, L. B.....Minneapolis
§Ford, W. H.....Minneapolis
Foster, O. W. .....Minneapolis
§Foster, W. K.....Minneapolis
§Fowler, L. H.....Minneapolis
§Fox, J. R.....Minneapolis
Frane, D. B.....Minneapolis
Frear, Rosemary R.....Minneapolis
§Fredericks, G. M.....Minneapolis
§Fredlund, M. L.....Minneapolis
§French, L. A.....Minneapolis
§Fried, L. A.....Minneapolis
§Friedell, Aaron.....Minneapolis
§Frost, J. B.....Minneapolis
Frykman, H. M.....Minneapolis
Fuller, Alice H.....Minneapolis
§Funk, V. K.....Oak Terrace
Galligan, Margaret M. D.Minneapolis
§Galloway, J. B.....Minneapolis
§Gammell, J. H.....Minneapolis
Garten, J. L.....Minneapolis
§Gaviser, D. .....Minneapolis
§Gibbs, R. W.....Minneapolis
§Giebenhaan, J. N.....Minneapolis
§Giere, J. C.....Minneapolis
§Giere, R. W.....Minneapolis
†Giessler, P. W.....Minneapolis
Gilbert, M. G.....Minneapolis
Gingold, B. A.....Minneapolis
§Girvin, R. B.....Minneapolis
§Goldberg, I. M. .....Minneapolis
§Goldman, T. I.....Minneapolis
§Goldner, M. Z.....Minneapolis
§Good, H. D.....Minneapolis
Gordon, P. E.....Minneapolis
§Gratzek, F. R.....Minneapolis
§Grave, Floyd.....Minneapolis
Gray, R. C.....Minneapolis
Grimes, Marian.....Minneapolis
§Gronvall, P. R.....Minneapolis
§Gushurst, E. G.....Minneapolis
§Gustason, H. T.....Minneapolis
Haberer, Helen R.....Minneapolis
Hagen, P. S.....Minneapolis
§Hagen, W. S. .....Minneapolis

†Haggard, G. D.....Minneapolis
§Hall, H. B.....Minneapolis
Hall, W. H.....Minneapolis
Hallberg, C. A.....Minneapolis
§†Hammerstad, L. M.....Minneapolis
§Hannah, H. B.....Minneapolis
§Hansen, C. O.....Minneapolis
§Hansen, E. W.....Minneapolis
Hansen, Olga S.....Minneapolis
§Hanson, H. J.....Minneapolis
Hanson, H. V.....Minneapolis
§Hanson, M. B.....Minneapolis
§Hanson, W. A.....Minneapolis
§Happe, L. J.....Minneapolis
§Hart, V. L.....Minneapolis
§Hartig, Helmina.....Minneapolis
§†Hartzell, T. B.....Minneapolis
§Hastings, D. R.....Minneapolis
§Hastings, D. W.....Minneapolis
§Hauge, E. T.....Minneapolis
§Haugen, G. W. .....Minneapolis
Haugen, J. A.....Minneapolis
Hauser, G. W. .....Minneapolis
§Haven, W. K.....Minneapolis
§Hawkinson, R. P.....Minneapolis
§Hayes, J. M.....Minneapolis
§Hayes, A. T. .....Minneapolis
§Head, D. P.....Minneapolis
†§Head, G. D. .....Minneapolis
†Hedback, A. E. .....Minneapolis
§Heim, R. R.....Minneapolis
Heisler, J. J. .....Minneapolis
†Hendrickson, J. F.....Minneapolis
§Henrikson, E. C.....Minneapolis
†Henry, C. E.....Kirksville, Mo.
Henry, M. O.....Minneapolis
Herbert, W. L.....Minneapolis
Hesdorffer, M. B. .....Minneapolis
§Higgins, J. H.....Minneapolis
§Hill, E. M.....Minneapolis
§†Hillis, S. J. .....St. Paul
Hinckley, R. G.....Minneapolis
§Hirshfield, F. R.....Minneapolis
†Hitchcock, C. R. .....Minneapolis
†Hoaglund, A. W.....
Santa Monica, Calif.
Hoffbauer, F. W. .....St. Paul
§Hoffert, H. E.....Minneapolis
§Hoffman, R. A.....Minneapolis
§Hoffman, W. L.....Minneapolis
§Holmberg, C. J.....Minneapolis
Holzapfel, F. C. .....Minneapolis
§Horns, R. C.....Minneapolis
Hovland, M. L.....Minneapolis
§Howard, S. E.....Minneapolis
†Howkom, B. .....Minneapolis
Hudson, G. E.....Minneapolis
§Huenekens, E. J.....Minneapolis
§Hultkrans, J. C.....Minneapolis
§Hultkrans, R. E.....Minneapolis
†Hurd, Annah .....Minneapolis
‡Hutchinson, C. J. .....Minneapolis
Hutchinson, Dorothy W..Oak Terrace
§Hymes, Charles.....Minneapolis
Hynes, J. E.....Minneapolis
Idstrom, L. G. .....Minneapolis
Irvine, H. G.....Minneapolis
§Iverson, R. M.....Minneapolis
§James, E. M.....Minneapolis
§Jensen, Harry.....Minneapolis
§†Jensen, M. J.....Minneapolis
§Jensen, N. K.....Minneapolis
Jensen, R. A.....Minneapolis
Jerome, Bourne .....Minneapolis
§Johnson, A. B.....Minneapolis
Johnson, A. E.....Minneapolis
Johnson, Evelyn V.....Minneapolis
§Johnson, E. W.....Minneapolis
§Johnson, H. A.....Minneapolis
§Johnson, J. A.....Minneapolis
§Johnson, J. W. .....Minneapolis
§Johnson, Julius.....Minneapolis
§Johnson, M. R.....Minneapolis
†Johnson, N. A...Santa Monica, Calif.
Johnson, Norman.....Minneapolis
§Johnson, N. T.....Minneapolis
Johnson, R. A.....Minneapolis
§Johnson, R. E.....Minneapolis
§Johnson, R. G.....Minneapolis
Johnson, Y. T.....Minneapolis
†Jones, H. W., Jr. .....Minneapolis
§Jones, W. R.....Minneapolis
Josewich, Alexander.....Minneapolis
§Judd, W. H.....Washington, D. C.
§Jurdy, M. J.....Minneapolis
Kabler, P. W.....Minneapolis
Kalin, O. T.....Minneapolis
Kaplan, J. J.....Minneapolis
§Karleen, C. I.....Minneapolis
Karlstrom, A. E.....Minneapolis
§Kaufman, H. J.....Minneapolis
§Kelby, G. M.....Minneapolis
§Kelly, J. P.....Minneapolis
§Kennedy, C. C.....Minneapolis

†Kennedy, Jane F. .....Minneapolis
§Kerkhof, A. C. .....Minneapolis
Kertesz, G. .....Minneapolis
§Kiesler, F., Jr. .....Minneapolis
†King, E. A. .....Minneapolis
King, Frances W. .....Oak Terrace
King, L. M., Jr. .....Minneapolis
§Kinsella, T. J. .....Minneapolis
§Kistler, A. J. .....Minneapolis
§Knapp, M. E. .....Minneapolis
Knight, R. R. .....Minneapolis
§Knight, R. T. .....Minneapolis
Knudsen, Helen L. .....Minneapolis
§Koepcke, G. M. .....Minneapolis
§Koller, H. M. .....Minneapolis
Koller, L. R. .....Minneapolis
Korchik, J. P. .....Minneapolis
Koschnitzke, H. K. ....Detroit, Mich.
Kottke, F. J. .....Minneapolis
§Koucky, R. W. .....Minneapolis
Kremen, A. J. .....Minneapolis
Kucera, F. J. .....Hopkins
§Kucera, W. J. .....Minneapolis
LaBree, J. W. .....Minneapolis
§Lagaard, S. M. .....Minneapolis
Lajoie, J. M. .....Minneapolis
§Lang, L. A. .....Minneapolis
§Lapierre, A. P. .....Minneapolis
§Lapierre, J. T. .....Minneapolis
§Larsen, F. W. .....Minneapolis
§Larson, C. M. .....Minneapolis
Larson, E. A. .....Minneapolis
§Larson, Lawrence M. .....Minneapolis
§Larson, L. M. .....Oak Terrace
§Larson, P. N. .....Minneapolis
§Larson, R. H. .....Minneapolis
§La Vake, R. T. .....Minneapolis
§Law, S. G. .....Minneapolis
§Laymon, C. W. .....Minneapolis
†Leavitt, H. H. .....Minneapolis
Lebowske, J. A. .....Minneapolis
§Lee, H. M. .....Minneapolis
§Leland, H. R. .....Minneapolis
§Lenz, O. A. .....Minneapolis
§Leonard, L. J. .....Minneapolis
§Leonard, Sam. .....Minneapolis
§Lerner, A. Ross. .....Minneapolis
Lillehei, E. J. .....Robbinsdale
‡Lind, C. J. Jr., ...Minneapolis
Lind, C. J. .....Minneapolis
Lindberg, A. C. .....Minneapolis
§Lindberg, V. L. .....Minneapolis
Lindberg, W. R. .....Minneapolis
§Lindblom, A. E. .....Minneapolis
§Lindgren, R. C. .....Minneapolis
§Lindquist, R. H. .....Minneapolis
§Linner, H. P. .....Minneapolis
Linner, J. H. .....Minneapolis
Lippman, E. S. .....Minneapolis
§Lipschultz, Oscar .....Minneapolis
§Litchfield, J. T. .....Minneapolis
Litman, A. B. .....Minneapolis
§*Litzenberg, J. C. .....Minneapolis
§Llewellyn, M. B. .....Minneapolis
§Lofsness, S. V. .....Minneapolis
§Logefeil, R. C. .....Minneapolis
§Loomis, E. A. .....Minneapolis
Lott, F. H. .....Minneapolis
Lovett, Beatrice R. .....Oak Terrace
Lowry, Elizabeth C. .....Minneapolis
Lowry, Thomas. .....Minneapolis
§Lufkin, N. H. .....Minneapolis
Lundberg, Ruth I. .....Minneapolis
Lundblad, R. A. .....Minneapolis
Lundblad, S. W. .....Minneapolis
§Lundgren, A. C. .....Minneapolis
§Lundquist, E. F. .....Minneapolis
§†Lynch, M. J. .....Minneapolis
Lysne, Henry .....Minneapolis
§Lysne, Myron. .....Minneapolis
†MacDonald, A. E. .....Minneapolis
§MacDonald, D. A. .....Minneapolis
§Mach, F. B. .....Minneapolis
§MacKinnon, D. C. .....Minneapolis
§MacMillan, D. G. .....Minneapolis
Macnie, J. S. .....Minneapolis
§Maeder, E. C. .....Minneapolis
§Maland, C. O. .....Minneapolis
Mankey, J. C. .....Minneapolis
§Mariette, E. S. .....Oak Terrace
§*Mark, D. B. .....Minneapolis
§Marking, G. H. .....Minneapolis
§Martin, G. R. .....Minneapolis
Martinson, C. J. .....Wayzata
†Martinson, E. J. .....Wayzata
†Matchan, G. R. .....Minneapolis
Mathews, J. .....Minneapolis
§Mattill, P. M. .....Oak Terrace
§Mattson, Hamlin. .....Minneapolis
§Maxeiner, S. R. .....Minneapolis
§McCaffrey, F. J. .....Minneapolis
McCann, E. J. .....Minneapolis
McCarthy, Donald. .....Minneapolis
McCartney, J. S. .....Minneapolis
McCormick, D. P. .....Minneapolis

‡McCrimmon, H. P. .....Minneapolis
†McDaniel, Orianna. .....Minneapolis
§McFarland, A. H. .....Minneapolis
§McGandy, R. F. .....Minneapolis
§McGeary, G. E. .....Minneapolis
§McInerny, M. W. .....Minneapolis
McKelvey, J. L. .....Minneapolis
§McKenzie, C. H. .....Minneapolis
§McKinlay, C. A. .....Minneapolis
†McKinley, J. C. .....Minneapolis
§McKinney, F. S. .....Minneapolis
McMurtrie, W. B. .....Minneapolis
§McPheeters, H. O. .....Minneapolis
†McQuarrie, Irvine. .....Minneapolis
§Meller, R. L. .....Minneapolis
§Merkert, C. E. .....Minneapolis
§Merkert, G. L. .....Minneapolis
†Merrick, Charlotte T. .....Minneapolis
†Merrill, Elizabeth. .....Minneapolis
§Meyer, A. J. .....Minneapolis
§Meyer, E. L. .....Minneapolis
Michael, J. C. .....Minneapolis
Michel, H. H. .....Minneapolis
§Michelson, H. E. .....Minneapolis
†Mickelsen, Emma F. .....Minneapolis
§Miller, Harold E. .....Minneapolis
Miller, Hugo E. .....Minneapolis
§Miller, J. C. .....Minneapolis
§Milton, J. S. .....Minneapolis
§Minsky, A. A. .....Minneapolis
§Mitchell, B. D. .....Minneapolis
Mitchell, E. C. .....Minneapolis
§Mitchell, M. T. .....Minneapolis
Mixer, Harry W. .....Minneapolis
§Moe, J. H. .....Minneapolis
§Moehn, J. T. .....Minneapolis
§Moen, J. K. .....Minneapolis
†Monahan, Elizabeth S. .....Minneapolis
§Monson, E. M. .....Minneapolis
Moore, I. H. .....Minneapolis
§Moos, D. J. .....Minneapolis
Moren, Edward. .....Minneapolis
Mork, A. H. .....Anoka
§Mork, F. E. .....Anoka
*Morrison, A. W. .....Minneapolis
Morrison, Charlotte J. .....Minneapolis
Morse, R. W. .....Minneapolis
Murphy, E. P. .....Minneapolis
§Murphy, I. J. .....Minneapolis
†Musty, N. J. .....Minneapolis
§Myers, J. A. .....Minneapolis
§Naslund, A. W. .....Minneapolis
§Neal, J. M. .....Minneapolis
Neary, R. P. .....Minneapolis
Nelson, C. B. .....Minneapolis
§Nelson, E. N. .....Minneapolis
†Nelson, H. S. .....Los Angeles, Calif.
§Nelson, M. C. .....Minneapolis
§Nelson, N. Harvey. .....Minneapolis
§Nelson, O. L. N. .....Minneapolis
§Nelson, W. I. .....Minneapolis
§Nesbitt, Samuel. .....Minneapolis
§Nesset, L. B. .....Minneapolis
Noonan, W. J. .....Minneapolis
§Nord, Robert E. .....Minneapolis
Noran, A. S. N. .....Minneapolis
§Noran, Harold H. .....Minneapolis
§Nordin, G. T. .....Minneapolis
§Nordland, Martin. .....Minneapolis
§†Noth, H. W. .....Minneapolis
§Nydahl, M. J. .....Minneapolis
§Nylander, E. G. .....Minneapolis
Nystrom, Ruth G. .....Minneapolis
§Oberg, C. M. .....Minneapolis
O'Donnell, J. E. .....Minneapolis
§Olsen, E. G. .....Minneapolis
§Olson, A. C. .....Minneapolis
Olson, B. G. .....Minneapolis
§Olson, J. W. .....Minneapolis
†Olson, O. A. .....Minneapolis
§Oppen, E. G. .....Minneapolis
†Owre, Oscar .....Minneapolis
§Palen, B. J. .....Minneapolis
Papermaster, T. C. .....Minneapolis
§Peppard, T. A. .....Minneapolis
Perlman, E. C. .....Minneapolis
Petersen, G. J. .....Minneapolis
§†Petersen, J. R. .....Minneapolis
§Peterson, H. W. .....Minneapolis
§Peterson, I. J. .....Minneapolis
Peterson, N. P. .....Minneapolis
Peterson, O. H. .....Minneapolis
§Peterson, P. E. .....Minneapolis
§Peterson, W. C. .....Minneapolis
Peterson, W. H. .....Minneapolis
§Petit, J. V. .....Minneapolis
§Petit, L. J. .....Minneapolis
§Pewters, J. T. .....Minneapolis
Peyton, W. T. .....Minneapolis
§Pfunder, M. C. .....Minneapolis
§Phelps, K. A. .....Minneapolis
Plass, H. F. R. .....Minneapolis
§Platou, E. S. .....Minneapolis
§Pleissner, K. W. .....St. Louis Park
§Plimpton, N. C. .....Minneapolis

§Pohl, J. F. .....Minneapolis
§Pollard, D. W. .....Minneapolis
Pollock, D. K. .....Minneapolis
§Polzak, J. A. .....Minneapolis
Poppe, F. H. .....Minneapolis
§Potter, R. B. .....Minneapolis
Pratt, F. J., Jr. .....Minneapolis
†Pratt, F. J., Sr. .....Minneapolis
§Preine, I. A. .....Minneapolis
§Preston, P. J. .....Minneapolis
§Priest, R. E. .....Minneapolis
§†Prim, J. A. .....Minneapolis
Proffitt, W. E. .....Minneapolis
§Proshek, C. E. .....Minneapolis
§Quello, R. O. B. .....Minneapolis
§Quist, H. W., Jr. .....Minneapolis
Quist, H. W., Sr. .....Minneapolis
§Ransom, H. R. .....Osseo
Reader, D. R. .....Minneapolis
§Regan, J. J. .....Minneapolis
§Regnier, E. A. .....Minneapolis
Reid, L. M. .....Excelsior
§Reif, H. A. .....Minneapolis
§Reiley, R. E. .....Minneapolis
Resch, J. A. .....Minneapolis
*Reynolds, J. S. .....Minneapolis
§Rice, C. O. .....Minneapolis
§Richdorf, L. F. .....Minneapolis
§Rieke, W. W. .....Wayzata
Rigler, L. G. .....Minneapolis
Riordan, Elsie M. .....Minneapolis
§Risch, R. E. .....Minneapolis
Rizer, D. K. .....Minneapolis
Rizer, R. I. .....Minneapolis
Robb, E. F. .....Minneapolis
§Robbins, O. F. .....Minneapolis
Roberts, L. J. .....Minneapolis
§Roberts, S. W. .....Minneapolis
§Roberts, W. B. .....Minneapolis
§Rockwell, C. V. .....Minneapolis
§Rodda, F. C. .....Minneapolis
§Rodgers, C. L. .....Minneapolis
§Rodgers, R. S. .....Minneapolis
§Rosendahl, F. G. .....Minneapolis
Rosenfield, A. B. .....Minneapolis
§Rosenow, J. H. .....Minneapolis
§Rosenwald, R. M. .....Minneapolis
*Roskilly, G. C. P. .....Minneapolis
§Ross, A. J. .....Minneapolis
§Rucker, W. H. .....Minneapolis
Rud, N. E. .....Minneapolis
Rudell, G. L. .....Minneapolis
§Russeth, A. N. .....Minneapolis
§Rusten, E. M. .....Minneapolis
§Sadler, W. P. .....Minneapolis
St. Cyr, K. J. .....Robbinsdale
§Saliterman, B. I. .....Minneapolis
Samuelson, Samuel. .....Minneapolis
§Sandt, K. E. .....Minneapolis
§Sawatzky, W. A. .....Minneapolis
§Schaaf, F. H. K. .....Minneapolis
§Schaefer, W. G. .....Minneapolis
†Scheldrup, N. H. .....Minneapolis
§Scherer, L. R. .....Minneapolis
Scherling, S. S. .....Minneapolis
Schiele, B. C. .....Minneapolis
§Schmidt, G. F. .....Minneapolis
†Schmitt, S. C. .....Los Angeles, Calif.
†Schneider, J. P. .....Minneapolis
Schneider, R. A. .....Minneapolis
†Schneidman, N. R. .....Minneapolis
Schottler, M. E. .....Minneapolis
§Schultz, J. H. .....Minneapolis
§Schultz, P. J. .....Minneapolis
Schulze, W. M. .....Minneapolis
†Schussler, O. F. .....Minneapolis
§Schwartz, V. J. .....Minneapolis
†Schwyzer, Gustav. .....Minneapolis
†Scott, F. H. .....Minneapolis
§Scott, H. G. .....Minneapolis
§Seaberg, J. A. .....Minneapolis
§†Seashore, Gilbert. .....Minneapolis
Seham, Max. .....Minneapolis
§Seifert, M. H. .....Excelsior
§Seljeskog, S. R. .....Minneapolis
§Semsch, R. D. .....Minneapolis
§Shandorf, J. F. .....Minneapolis
Shaperman, Eva P. .....Minneapolis
§Shapiro, M. J. .....Minneapolis
Sharp, D. V. .....Minneapolis
§Shea, A. W. .....Minneapolis
Sher, Louis .....Minneapolis
§Shronts, J. F. .....Minneapolis
§Siegmann, W. C. .....Minneapolis
Silver, J. D. .....Minneapolis
§†Simons, J. H. .....Minneapolis
Simonson, D. B. .....Minneapolis
§Simpson, E. D. .....Minneapolis
Sinykin, M. B. .....Minneapolis
Siperstein, D. M. .....Minneapolis
†Sivertsen, Andrew. .....Mound
§Sivertsen, Ivar. .....Minneapolis
§Skjold, A. C. .....Minneapolis
§Smisek, F. M. .....Minneapolis
§Smith, Adam M. .....Minneapolis

§Smith, Archie M.....Minneapolis
Smith, B. A., Jr.....Minneapolis
Smith, Don V.....Minneapolis
Smith, G. G.....Minneapolis
Smith, H. R.....Minneapolis
†Smith, Margaret I. .....Minneapolis
§Smith, N. M.....Minneapolis
Smith, N. R.....Minneapolis
Soderlind, R. T.....Minneapolis
§Solhaug, S. B.....Minneapolis
§Spano, J. P.....Minneapolis
§Spink, W. W.....Minneapolis
§Spratt, C. N.....Minneapolis
§Stahr, A. C.....Hopkins
§Stanford, C. E.....Minneapolis
State, David .....Minneapolis
Stein, K. E.....Lakeville
§Stelter, L. A.....Minneapolis
Stennes, J. L.....Minneapolis
Stenstrom, Annette .....Minneapolis
§Stewart, R. I.....Minneapolis
Stiegler, F. S. .....Minneapolis
§Stoesser, A. V.....Minneapolis
†Stomel, Joseph....Los Angeles, Calif.
†Strachauer, A. C.....Minneapolis
§Strom, G. W.....Minneapolis
Stromgren, D. T.....Minneapolis
§Stromme, W. B.....Minneapolis
Stone, S. P.....Minneapolis
§*Strout, G. E. .....Minneapolis
§Sturre, J. R.....Minneapolis
Subby, W. .....Minneapolis
§Sukov, Marvin.....Minneapolis
Sullivan, R. M.....Minneapolis
Swanson, R. E.....Minneapolis
†Swanson, V. F. .....Minneapolis
§Sweetser, H. B., Jr.....Minneapolis
†Sweetser, H. B., Sr.....Minneapolis
§Sweetser, T. H.....Minneapolis
Sweitzer, S. E.....Minneapolis
§†Swendseen, C. G.....Minneapolis

§Tangen, G. M.....Minneapolis
Taylor, J. H.....Minneapolis
§Tenner, R. J.....Minneapolis
§Thomas, G. E.....Minneapolis
†Thomas, G. H.....Minneapolis
§Thompson, W. H.....Minneapolis
Thomson, J. M. .....Minneapolis
Thorson, S. V. .....Minneapolis
§Thysell, D. M.....Minneapolis
§†Tingdale, A. C.....Minneapolis
§Tinkham, R. G.....Minneapolis
Titrud, L. A.....Minneapolis
§Tobin, J. D.....Minneapolis
Todd, Romona L.....Minneapolis
§Trach, Benedict.....Minneapolis
§Trow, J. E.....Minneapolis
§Trow, W. H. .....Minneapolis
Troxil, Elizabeth B.....Minneapolis
Trueman, H. S.....Minneapolis
§Tucker, W. B.....Minneapolis
§Tudor, R. B.....Minneapolis
§Tunstead, H. J.....Minneapolis
§Turnacliff, D. D. .....St. Paul
Twomey, J. E. .....Minneapolis
§Ude, W. H.....Minneapolis
§Ulrich, H. L.....Minneapolis
§Undine, C. A.....Minneapolis
Vik, A. E.....Minneapolis
§Wahlquist, H. F.....Minneapolis
§*Walch, A. E. .....Minneapolis
§Waldron, C. W.....Minneapolis
Walker, S. A. .....Minneapolis
§Wall, C. R.....Minneapolis
Walsh, F. M.....Minneapolis
Walsh, W. T.....Minneapolis
Wangensteen, O. H.....Minneapolis
Ward, P. A.....Minneapolis
§Watson, C. G.....Minneapolis
§Watson, C. J.....Minneapolis
Watson, W. H. A.....Minneapolis
Watson, R. E. .....Minneapolis

Weaver, M. M.....Minneapolis
§Webb, E. A.....Minneapolis
§Webb, R. C.....Minneapolis
Weisberg, R. J. .....Minneapolis
Wendland, J. P. .....Minneapolis
Werner, George.....Minneapolis
†West, Catharine C.....Minneapolis
‡Westphal, K. F.....Minneapolis
§Wethall, A. G.....Minneapolis
Wetherby, Macnider.....Minneapolis
§Weum, T. W.....Minneapolis
§White, A. A.....Minneapolis
§White, S. M.....Minneapolis
§White, W. D.....Minneapolis
§Whitesell, L. A.....Minneapolis
§Widen, W. F.....Minneapolis
Wilcox, A. E.....Minneapolis
§†Willcutt, C. E.....Pboenix, Ariz.
†Wilder, K. W. .....Minneapolis
§Wilder, R. L.....Minneapolis
§Wilder, R. M., Jr.....Minneapolis
§Wilken, P. A.....Minneapolis
†Williams, Robert.....Carthage, Ill.
Winther, Nora M. C.....Minneapolis
Wipperman, F. F. .....Minneapolis
§Witham, C. A.....Minneapolis
Wittich, F. W.....Minneapolis
Wolf, A. H.....Minneapolis
§Wohlrabe, A. A.....Minneapolis
§†Wood, R. A. .....Minneapolis
§*Wright, S. G. .....Minneapolis
Wright, W. S.....Minneapolis
Wyatt, O. S.....Minneapolis
Wynne, H. M. N.....Minneapolis
§Ylvisaker, R. S.....Minneapolis
§Yoerg, O. W.....Minneapolis
Zaworski, Leo A. .....Minneapolis
Zierold, A. A.....Minneapolis
§Zinter, F. A.....Minneapolis
Ziskin, Thomas.....Minneapolis

KANDIYOHI-SWIFT-MEEKER COUNTY MEDICAL SOCIETY

Regular meetings, second Wednesday of month
Annual meeting, December
Number of Members: 40

President
Kaufman, E. J. .....Appleton

Secretary
Jacobs, D. L. .....Willmar

Anderson, R. E.....Willmar
Arnson, J. M.....Benson
Bosland, H. G.....Willmar
§Branton, B. J. .....Willmar
†Daignault, Oscar .....Benson
Danielson, K. A.....Litchfield
Danielson, Lennox.....Litchfield
Dille, D. E.....Litchfield
Eberley, T. S.....Benson
Fisher, J. M.....Willmar

Frederickson, Alice C.....Willmar
Frederickson, G. U. Y.....Willmar
Frisch, F. P.....Willmar
†§Frost, E. H.....Willmar
Giere, S. W.....Benson
Gilman, L. C.....Willmar
Griffin, R. P.....Benson
Hodapp, R. J.....Willmar
§Jacobs, D. L.....Willmar
§Jacobs, J. C. .....Willmar
Johnson, Hans.....Kerkhoven
Kaufman, E. J.....Appleton
Lindley, S. B.....Willmar
McCarthy, Austin M. .....Willmar
Michels, R. P. .....Willmar

Nelson, Kenneth .....Clara City
O'Connor, D. C.....Eden Valley
Penhall, F. W. .....Willmar
Peterson, Willard E.....Willmar
Porter, O. M.....Willmar
Proeschel, R. K.....Willmar
Ripple, R. J.....New London
Rygh, Harold N.....Atwater
†Scofield, C. L.....Benson
Sellers, G. K.....Dassel
Solsem, F. N. .....Spicer
Telford, V. J.....Litchfield
Tyler, S. H.....Raymond
Wilmot, C. A.....Litchfield
Wilmot, H. E.....Litchfield

LYON-LINCOLN COUNTY MEDICAL SOCIETY

Regular meetings, first Tuesday of month
Annual meeting, last Tuesday in October
Number of Members: 27

President
Murphy, Josepb E. .....Marsball

Secretary
Workman, W. G.....Tracy

Akester, Ward.....Fergus Falls
Benson, L. M. .....Tracy
Eckdale, J. E.....Marshall
Ferguson, W. C.....Walnut Grove
§Ford, B. C.....Marshall

Frank, J. E. ....Salt Lake City, Utah
Friedell, George.....Ivanhoe
Hedenstrom, P. C. .....Marshall
Helferty, J. K.....Minneapolis
§Hermanson, P. E.....Hendricks
§Hoidale, A. D.....Tracy
Johnson, C. P.....Tyler
Kreuzer, T. C.....Marshall
Monson, L. J.....Canby
Murpby, J. E.....Marshall
Peterson, K. A. .....Marshall

Purves, G. H.....Hendricks
Remsberg, R. R.....Tracy
†Robertson, J. B.....Minneapolis
†Sanderson, E. T. .....Alexandria
Sether, A. F.....Ruthton
Storsteen, K. A.....Rochester
Thompson, C. O.....Hendricks
§Vadheim, A. L.....Tyler
§Valentine, W. H.....Tracy
Workman, W. G.....Tracy
Yaeger, W. W.....Marshall

McLEOD COUNTY MEDICAL SOCIETY

Regular meetings, second or third Wednesday of month
Annual meeting, January
Number of Members: 20

President
Brink, Donald .....Hutchinson

Secretary
Neumaier, Arthur .....Glencoe

Brink, D. M.....Hutchinson
§Goss, H. C.....Glencoe
Goss, Martha D.....Glencoe
§Gridley, J. W.....Glencoe

§Holm, H. H.....Glencoe
§Jensen, A. M.....Brownton
§Kallestad, L. L. .....Brownton
§Klima, W. W.....Stewart
Leitschuh, T. H. .....Winsted
§Lippmann, E. W.....Hutchinson
§McMahon, M. J.....Green Isle
§Neumaier, Arthur.....Glencoe

Peterson, K. H.....Hutchinson
Sahr, W. G.....Hutchinson
Scholpp, O. W.....Hutchinson
§Selmo, J. D.....Norwood
§Sheppard, C. G.....Hutchinson
§Smyth, J. J. .....Lester Prairie
§Truesdale, C. W.....Glencoe
Trutna, T. J.....Silver Lake

MOWER COUNTY MEDICAL SOCIETY

Regular meeting, last Thursday of each month
Annual meeting, December
Number of Members: 29

President
Leck, Paul C. .....Austin

Secretary
Rosenthal, F. H. .....Austin
§*Allen, H. B. .....Austin

§Anderson, D. P., Jr. .....Austin
§Barber, Tracy E.....Austin
Buresh, K. L. .....LeRoy
§Cronwell, B. J.....Austin
Fisch, H. M.....Austin
§Flanagan, L. G.....Austin

§Grise, W. B.....Austin
Hauser, P. J. .....Austin
Havens, J. G. W.....Austin
†Hegge, O. H.....Austin
§Hegge, R. S.....Austin
§Hertel, G. E.....Austin

§Leck, P. C.....Austin
§Limbacker, H. P. .....Austin
§Lommen, P. A.....Austin
§McKenna, J. K.....Austin
Melzer, G. R.....Lyle
Morse, M. P.....Le Roy
§Peterson, S. C. .....Austin
§Robertson, P. A.....Austin
§Rosenthal, F. H.....Austin
§Sargent, E. C. .....Austin
Schneider, P. J.....Adams
§Schottler, G. J.....Dexter
§Seery, T. M. .....Austin
§Sheedy, C. L.....Austin
Twiggs, L. F. .....Austin
§Wilson, F. C.....Austin
§Wright, R. R. .....Austin

NICOLLET-LE SUEUR COUNTY MEDICAL SOCIETY

Regular meetings, every four months
Annual meeting, December
Number of Members: 28

President
Grimes, B. P. .....St. Peter
Secretary
Wilcox, G. C. .....St. Peter

†Aitkens, H. B.....LeCenter
Bodaski, A. A. .....LeCenter
§Covell, W. W.....St. Peter
§Curtis, R. A.....LeCenter
§Dahlstet, J. P. .....North Mankato
§Ericson, Swan.....Le Sueur
§Giroux, A. A. .....North Mankato
§Grimes, B. P.....St. Peter
§Hiniker, P. J.....Le Sueur
*Holtan, Theodore .....Waterville
§Johnson, H. C.....North Mankato
Kabrick, O. A. .....St. Peter
§Larson, M. H.....Nicollet
§Lenander, M. E.....St. Peter
§Navratil, D. R.....Montgomery
§Nilson, H. J.....North Mankato
§Olmanson, E. G.....St. Peter
§Olson, D. C.....Gaylord
Rossen, R. .....Hastings
Schulberg, V. A. .....Arlington
†Sherman, A. G. .....Minneapolis
§Sjostrom, L. E. .....St. Peter
§Sonnesyn, N. N. .....Le Sueur
§Strathern, C. S.....St. Peter
Strathern, F. P.....St. Peter
Tatum, D. E. .....St. Peter
§Traxler, J. F.....Henderson
§Wilcox, G. C. .....St. Peter
§Wohlrabe, C. F.....North Mankato

OLMSTED-HOUSTON-FILLMORE-DODGE COUNTY MEDICAL SOCIETY

Regular meetings, first Wednesday every odd month
Annual meeting, November
Number of Members: 681

President
Woltman, H. W. .....Rochester
Secretary
Carryer, H. M.....Rochester

§Ackerman, R. F.....Rochester
§Adams, Neil D. .....Rochester
§Adams, R. C.....Rochester
§Adson, A. W.....Rochester
Affeldt, D. E.....Kasson
§Ahlfs, J. J.....Caledonia
§Albers, Donald D. .....Rochester
§Aldrich, C. A.....Rochester
§Allen, C. S.....Rochester
§Allen, E. V.....Rochester
§Allen, H. E.....Rochester
§Allen, Lewis G. .....Rochester
§Alvarez, W. C.....Rochester
†Amberg, Samuel .....Rochester
Anderson, Charles D. ....Chicago, Ill.
Andersen, H. A.....Rochester
§Anderson, James .....Rochester
Anderson, M. E., Jr.....Rochester
§Anderson, M. J.....Rochester
§Anderson, M. W.....Rochester
§Anderson, R. E.....Rochester
§Anderson, Robert L. .....Rochester
Anderson, Thomas Page ....Rochester
§Anthony, Walter P. .....Rochester
§Arling, P. A.....Rochester
§Arnesen, J. F. .....Rochester
Arnold, S. J. .....Brooklyn, N. Y.
§Ashe, W. M. .....Rochester
§Austin, G. W. .....Rochester
§Baggenstoss, A. H.....Rochester
§Bailey, A. A.....Rochester
§Bailey, J. H., Jr.....Rochester
§Bair, H. L.....Rochester
§Baker, G. S.....Rochester
§Baker, H. R.....Hayfield
§Baker, R. L.....Hayfield
§Balfour, D. C.....Rochester
§Balfour, D. C., Jr.....Rochester
§Balfour, W. M.....Rochester
§Ball, Warren P. .....Rochester
§Banner, E. A.....Rochester
§Bargen, J. A.....Rochester
§Barger, J. D.....Rochester
§Barker, N. W.....Rochester
§Barnes, A. R.....Rochester
§Barnes, Ben C.....Rochester
§Barr, M. M. .....Rochester
§Baskin, R. H. .....Rochester
§Bateman, J. G. .....Rochester
§Bauer, E. L. .....St. Paul
§Bayrd, E. D.....Rochester
§Beahrs, O. H.....Rochester
‡Bearzy, H. J. ....West Point, N. Y.
§Beck, W. W., Jr. .....Rochester
Beeler, J. W. .....Rochester
Begley, J. W., Jr. .....Rochester
§Bellegie, N. J. .....Rochester
Belote, G. B.....Caledonia
§Benedict, W. L.....Rochester
§Bennett, H. S. .....Rochester
§Bennett, W. A.....Rochester
Bentson, J. H. .....Rochester
§Berkman, D. M.....Rochester
§Berkman, J. M.....Rochester
§Bernatz, P. E. .....Rochester
§Bickel, W. H.....Rochester
§Bigelow, C. E.....Dodge Center
§Bilka, P. J. .....Rochester
§Biorn, C. L.....Rochester
§Black, B. M.....Rochester
Blackburn, C. M.....Rochester
Block, M. A. .....Rochester
§Blunt, C. P., III.....Rochester
§Bolger, J. V. .....Rochester
§Boothby, W. M.....Rochester
§Boucek, Robert J. .....Rochester
§Bowing, H. H.....Rochester
§Boylan, R. N.....Rochester
§Braasch, W. F.....Rochester
§Braceland, F. J. .....Rochester
§Brandenburg, R. O. .....Rochester
§Brandes, R. W... .....Rochester
Brickley, P. M. .....Rochester
§Brilhart, K. B.....Rochester
§Broders, A. C.....Rochester
§Brooks, L. M.....Rochester
§Brooksby, W. A.....Rochester
§Brown, A. E.....Rochester
§Brown, H. A.....Rochester
§Brown, H. S.....Rochester
§Brown, P. W.....Rochester
§Browning, W. H.....Rochester
§Brunsting, L. A.....Rochester
Bryan, A. L. .....San Diego, Calif.
§Buffmire, D. K. .....Rochester
§Buie, Louis A.....Rochester
§Burchell, H. B.....Rochester
§Burgess, H. M. .....Rochester
§Bush, R. P.....Rochester
§Burke, E. C. .....Rochester
Busard, J. M. .....Rochester
§Butler, D. B. .....Rochester
§Butt, H. R.....Rochester
§Cain, J. C.....Rochester
§Cameron, J. M.....Rochester
§Camp, J. D.....Rochester
§Campbell, D. C. .....Rochester
§Cannon, B. W. .....Rochester
§Carlander, L. W., Jr.,.....Rochester
Carpenter, G. T. .....Rochester
§Carr, D. T.....Rochester
§Carroll, T. T. .....Rochester
§Carryer H. M.....Rochester
§Carter, J. W., Jr.....Rochester
Cashin, J. C. .....Rochester
Chance, D. P.....Rochester
Chapman, C. E. .....Rochester
§Childs, D. S., Jr.....Rochester
§Christensen, N. A.....Rochester
§Christoferson, L. A.....Rochester
§Clagett, O. T.....Rochester
Clark, L. W.....Spring Valley
Clifton, T. A.....Chatfield
Cole, J. P. .....Rochester
§Collett, R. W. .....Rochester
§Combs, R. G. .....Rochester
§Comfort, M. W. .....Rochester
§Cook, E. N.....Rochester
§Cooper, Talbert.....Rochester
§Corbin, K. B.....Rochester
§Corcoran, C. E.....Rochester
§Counseller, V. S.....Rochester
§Coventry, M. B.....Rochester
§Craig, W. McK.....Rochester
§Crehan, E. L. .....Rochester
§Crenshaw, J. L., Jr. .....Rochester
§Crowley, D. F., Jr.....Rochester
§Crumpacker, Edgar .....Rochester
§Curtiss, R. K. .....Rochester
§Dahlin, D. C.....Rochester
§Daniels, B. T.....Rochester
§Daugherty, G. W.....Rochester
§Davis, A. C.....Rochester
Davis, I. G.....Rushford
§Davis, R. M. .....Rochester
§Davis, R. E. .....Rochester
Day, Lois A.....Rochester
§Dearing, W. H., Jr.....Rochester
Decker, D. G. .....Rochester
§Dederick, G. F., Jr.....Rochester
DeForest, R. E. .....Rochester
§Desjardins, A. U.....Rochester
§Devine, K. D.....Rochester
§Devney, J. W.....Rochester
§DeWeerd, J. H. .....Rochester
§Diessner, G. R.....Rochester
§Dixon, C. F. .....Rochester
§Dockerty, M. B.....Rochester
§Dodge, Mark .....Rochester
Dolder, F. C.....Eyota
Donahoe, J. W. .....Rochester
§Donoghue, F. E.....Rochester
§Dornberger, G. R.....Rochester
Douglas, J. M.....Rochester
§Douglass, B. E.....Rochester
†Drake, F. A.....Lanesboro
§Drescher, E. P. .....Rochester
Drips, Della G.....Rochester
§Drumheller, J. F.....Rochester
§Dry, T. J.....Rochester
§Duncan, D. K.....Rochester
§DuShane, J. W.....Rochester
§Dworetzky, Murray .....Rochester
Earnest, Franklin .....Rochester
§Eaton, L. M.....Rochester
§Eby, Lee G. .....Rochester
§Eckstam, E. E.....Rochester
Edwards, J. E. .....Rochester
§Elkins, E. C.....Rochester
§Elliott, J. A., Jr.....Rochester
§Ellis, E. J. .....Rochester
§Ellis, F. H.....Rochester
§Emmett, J. L.....Rochester
§Engel, J. P. .....Rochester
Engels, E. P. .....Spring Valley
Epperson, D. P. .....Rochester
§Erb, H. R.....Rochester
§Erich, J. B.....Rochester
§Erickson, D. J.....Rochester
§Estes, J. E.....Rochester
§Eusterman, G. B.....Rochester
†Evarts, A. B.....Rochester
Eyster, W. H., Jr. .....Rochester
§Faber, J. E.....Rochester
§Fahey, M. M. .....Rochester
§Falsetti, F. P. .....Rochester
§Faulconer, A., Jr.....Rochester
§Faulkner, J. W. .....Rochester
§Fazio, A. N. .....Rochester
Feldman, F. M. ....Washington, D. C.
§Ferris, D. O.....Rochester
§Ferris, H. A., Jr. .....Rochester
§Figi, F. A.....Rochester
§Fisher, C. E. .....Rochester
§Fisher, R. G.....Rochester
§Flautt, J. R., Jr.....Rochester
§Ford, J. L.....Rochester
§Forsythe, R. W. .....Rochester
Foss, E. L.....Rochester
Foulk, W. T., Jr. .....Rochester
§Frank, L. M. .....Rochester
§Freeman, J. G. .....Rochester
§Fricke, R. E.....Rochester
§Fricke, R. W.....Rochester

§Fuller, B. F., Jr. ..... Rochester
§Fuller, J. ..... Rochester
§Gaarde, F. W., Jr. ..... Rochester
§†Gambill, C. M. ..... Rochester
§Gambill, E. E. ..... Rochester
Gastineau, C. F. ..... Rochester
§Gates, E. M. ..... Detroit, Mich.
§Gay, J. R. ..... Rochester
Geraci, J. E. ..... Rochester
§Gersten, J. W. ..... Rochester
§Ghormley, R. K. ..... Rochester
§Giffin, H. Z. ..... Rochester
Giffin, Mary E. ..... Rochester
§Glenn, W. V. ..... Rochester
§Gogela, L. J. ..... Rochester
§Golden, P. B. ..... Rochester
§Gooch, J. O. ..... Rochester
§Good, C. A., Jr. ..... Rochester
§Gramse, A. E. ..... Rochester
§Gray, C. P. ..... Rochester
§Gray, H. K. ..... Rochester
Greene, L. F. ..... Rochester
§Griffith, E. R. ..... Rochester
§Grindlay, J. H. ..... Rochester
§Groom, J. J. ..... Rochester
§Gross, J. B. ..... Rochester
§Grotting, J. K. ..... Rochester
§Guernsey, D. E. ..... Rochester
Habein, H. C. ..... Rochester
§Hagedorn, A. B. ..... Rochester
§Haines, S. F. ..... Rochester
§Hall, B. E. ..... Rochester
Hall, Buford ..... Rochester
§Hallberg, O. E. ..... Rochester
§Hallenbeck, D. F. ..... Rochester
§Hallenbeck, G. A. ..... Rochester
§Hamilton, C. F. ..... Rochester
Hanlon, D. G. ..... Rochester
Hanlon, G. H. ..... Rochester
§Hanson, N. O. ..... Rochester
§Hargraves, M. M. ..... Rochester
Harnagel, E. E. ..... Rochester
§Harrington, S. W. ..... Rochester
§Harris, L. E. ..... Rochester
§Hart, G. M. ..... Rochester
§Hartman, H. R. ..... Rochester
§Harvard, B. M. ..... Rochester
§Hasskarl, W. F., Jr. ..... Rochester
§Hatcher, A. C. ..... Rochester
§Hauch, E. W. ..... Rochester
§Havens, F. Z. ..... Rochester
§Hay, S. H. ..... Rochester
§Hayes, D. W. ..... Rochester
§Hayles, A. B. ..... Rochester
§Haynes, Allan ..... Rochester
§Heck, F. J. ..... Rochester
§Heck, W. E. ..... Rochester
†Heilman, D. H. ..... Rochester
Heilman, F. R. ..... Rochester
†Helland, G. M. ..... Spring Grove
§†Helland, J. W. ..... Spring Grove
§Helmholz, H. F. ..... Rochester
§Hempstead, B. E. ..... Rochester
§Hench, P. S. ..... Rochester
§Henderson, E. D. ..... Rochester
§Henderson, J. W. ..... Rochester
§Henderson, M. S. ..... Rochester
Herbst, R. F. ..... Wykoff
Hermann, H. W. ..... Caledonia
§Herrell, W. E. ..... Rochester
§Heterington, J. A. ..... Rochester
Hewitt, Edith S. ..... Rochester
†Hewitt, R. M. ..... Rochester
†Heyerdale, O. C. ..... Rochester
§Hightower, N. C. ..... Rochester
§Hildebrand, C. H., Jr. ..... Rochester
§Hill, J. R. ..... Rochester
Hills, O. W. ..... Rochester
§Hilsabeck, J. R. ..... Rochester
§Hines, E. A., Jr. ..... Rochester
§Hinshaw, H. C., San Francisco, Calif.
§Hodgson, C. H. ..... Rochester
§Hodgson, J. R. ..... Rochester
§Hogben, C. A. ..... Rochester
Holland, C. R. ..... Rochester
§Hollenhorst, R. W. ..... Rochester
§Holman, C. B. ..... Rochester
§Hoon, J. R. ..... Rochester
Horan, M. J., Jr. ..New York, N. Y.
§Horning, E. D. ..... Rochester
§Horton, B. T. ..... Rochester
§Howell, L. P. ..... Rochester
§Hunt, A. B. ..... Rochester
§Hunt, William ..... Rochester
§Hunter, J. S., Jr. ..... Rochester
§Ivins, J. C. ..... Rochester
§Jackson, A. E. ..... Rochester
§Jackson, H. S. ..... Rochester
§Jamison, R. W. ..... Rochester
§Jampolis, R. W. ..... Rochester
§Janes, J. M. ..... Rochester
§Jarrett, P. S. ..... Rochester
§Jennings, D. T. ..... Rochester
§Jensen, E. J. ..... Rochester
§Jensen, G. L. ..... Rochester
Johnson, A. B., II ..... Rochester
§Johnson, B. H., Jr. ..... Rochester
§Johnson, C. C. ..... Rochester
Johnson, E. W. ..... Rochester
§Johnson, H. A. ..... Rochester
§Johnson, H. W. ..... Rochester
§Johnson, M. A. ..... Rochester
Johnson, M. D. ..... Rochester
Johnson, R. B. ..... Lanesboro
§Jondahl, W. H. ..... Rochester
§Jones, G. W. ..... Rochester
Jones, J. R. ..... Rochester
Joyce, G. L. ..... Rochester
§Joyce, G. T. ..... Rochester
§Judd, E. S., Jr. ..... Rochester
§Jackman, R. J. ..... Rochester
§Kaplan, J. H. ..... Rochester
Kaster, J. D. ..... Rochester
Keates, A. E. ..... Rochester
§Keating, F. R., Jr. ..... Rochester
§Keating, J. U. ..... Rochester
§Keith, H. M. ..... Rochester
§Keith, N. M. ..... Rochester
§Kelley, E. P. ..... Rochester
§Kelsey, J. R. ..... Rochester
§Kelty, R. H. ..... Rochester
Kemper, C. M. ..... Rochester
§Kennedy, R. L. J. ..... Rochester
§Kernohan, J. W. ..... Rochester
§Kieley, W. F. ..... Rochester
§Kierland, R. R. ..... Rochester
Kimbrough, R. F. ..... Rochester
King, Nancy B. ..... Rochester
§Kirby, T. J., Jr. ..... Rochester
§Kirklin, B. R. ..... Rochester
§Kirklin, J. W. ..... Rochester
Kirkpatrick, N. R. ..... Rochester
§Kleckner, M. S., Jr. ..... Rochester
Knight, C. D. ..... Rochester
§Knisely, R. M. ..... Rochester
§Knutson, J. R. B. ..... Rochester
§Knutson, L. A. ..... Spring Grove
§Koelsche, G. A. ..... Rochester
§Koza, D. W. ..... Rochester
§Krakowka, G. F. ..... Rochester
§Krusen, E. M., Jr. ..... Rochester
Krusen, F. H. ..... Rochester
§Kulwin, M. H. ..... Rochester
§Kvale, W. F. ..... Rochester
§Lake, C. F. ..... Rochester
§Lamont, C. S. ..... Rochester
§Lampert, E. G. ..... Rochester
§Landry, R. M. ..... Rochester
§Lang, C. M. ..... Rochester
Lannin, J. C. ..... Mabel
§Leary, W. V. ..... Rochester
§Leddy, E. T. ..... Rochester
Leden, U. M. ..... Rochester
§Lee, M. J. ..... Rochester
§Lemon, W. E. ..... Rochester
§†Lemon, W. S. ..... Rochester
§Levin, Louis ..... Rochester
§Lewis, M. L., Jr. ..... Rochester
§Lillie, H. I. ..... Rochester
§Lillie, W. I. ..... Rochester
§Lipscomb, P. R. ..... Rochester
§Livermore, G. R., Jr. ..... Rochester
Locke, W. ..... Boston, Mass.
§Logan, Arch. Jr. ..... Rochester
§Logan, A. H. ..... Rochester
§Logan, G. B. ..... Rochester
§Long, J. W. ..... Rochester
§Love, J. G. ..... Rochester
§Lovelady, S. B. ..... Rochester
§Lowman, E. W. ..... Rochester
§Lowy, Alexander, Jr. ..... Rocehster
§Lucas, J. E. ..... Rochester
§Luellen, T. J. ..... Rochester
§Lundy, J. S. ..... Rochester
§Luttgens, W. F. ..... Rochester
Lynch, J. L. ..... Santa Ana, Calif.
§MacCarty, C. S. ..... Rochester
MacCarty, W. C. ..... Rochester
§MacLean, A. R. ..... Rochester
§MacMurtrie, W. J., Jr. ..... Rochester
§Magath, T. B. ..... Rochester
§Maino, V. J. ..... Rochester
§†Mann, F. C. ..... Rochester
Mann, Frank D. ..... Rochester
§Marshall, T. M. ..... Rochester
§Martin, G. M. ..... Rochester
§Martin, W. B. ..... Rochester
§Masson, D. M. ..... Rochester
§Masson, J. C. ..... Rochester
§Mayo, C. W. ..... Rochester
§Maytum, C. K. ..... Rochester
§McBean, J. B. ..... Rochester
§McBurney, R. P. ..... Rochester
§McClellan, J. T. ..... Rochester
§McConahey, W. M., Jr. ..... Rochester
McCorkle, J. K. ..... Rochester
§McCormack, L. J. ..... Rochester
McCreight, W. G. ..... Rochester
§McDonald, J. R. ..... Rochester
§McElin, T. W. ..... Rochester
McKaig, C. B. ..... Pine Island
§McLaughlin, B. H. ..... Rochester
§McMahon, J. M. ..... Rochester
§McMillan, J. T. ..... Rochester
§McNaughton, R. A. ..... Rochester
§McWhorter, H. E. ..... Rochester
§Meadows, E. R. ..... Rochester
§Medwick, J. X. ..... Rochester
§Merrill, J. G. ..... Rochester
§Merritt, W. A. ..... Rochester
§Meyerding, H. W. ..... Rochester
§Milburn, G. B. ..... Rochester
§Millen, F. J. ..... Rochester
Miller, E. M. ..... Rochester
§Miller, J. Ralph ..... Rochester
§Miller, J. Regis ..... Rochester
§Mills, M. D. ..... Rochester
§Mills, S. D. ..... Rochester
§Moersch, F. P. ..... Rochester
§Moersch, H. J. ..... Rochester
§Moersch, R. U. ..... Rochester
§Monsour, K. J. ..... Rochester
§Montgomery, G. E. ..... Rochester
§Montgomery, Hamilton ..... Rochester
§Morgan, E. H. ..... Rocehster
Morgan, J. L. ..... Rochester
§Morlock, C. G. ..... Rochester
Morris, C. R. ..... Rochester
§Morris, D. S. ..... Rochester
§Morrison, A. E., Jr. ..... Rochester
§Morrison, R. W. ..... Rochester
§Morrow, R. P., Jr. ..... Rochester
§Morton, G. H. ..... Rochester
Murphy, M. E. ..... Rochester
Murphy, M. H. ..... Rochester
Musgrove, J. E. ..... Rochester
Mussey, Mary E. ..... Rochester
Mussey, R. D., Jr. ..... Rochester
§Myers, T. T. ..... Rochester
§Nachtwey, R. A. ..... Rochester
Nehring, J. P. ..... Preston
Nelson, C. G. ..... Rochester
Nelson, P. A. ..... Rochester
§New, G. B. ..... Rochester
§Nichols, D. R. ..... Rochester
§Nicholson, J. W., III ..... Rochester
§Nickeson, R. W. ..... Rochester
§Nix, J. T. ..... Rochester
§Noehren, T. H. ..... Rochester
§Norris, N. T. ..... Caledonia
Norval, M. A. ..... Rochester
§Nowak, D. J. ..... Rochester
§Odel, H. M. ..... Rochester
§O'Leary, P. A. ..... Rochester
§Olsen, A. M. ..... Rochester
Olson, E. A. ..... Pine Island
Olson, G. E. ..... West Concord
§Olson, S. W. ..... Rochester
Onsgard, L. K. ..... Houston
§Osborn, J. E. ..... Rochester
§Owen, C. A., Jr. ..... Rochester
§Painter, R. C. ..... Rochester
Palazzo, F. A. ..... Rochester
§Parker, H. L. ..... Rochester
§Parker, R. L. ..... Rochester
Parkhill, Edith M. ..... Rochester
§Parkin, T. W. ..... Rochester
§Parkinson, Dwight ..... Rochester
§Paschall, J., Jr. ..... Pasadena, Calif.
§Patton, Matthew M., Jr. ..... Rochester
§Paulson, G. S. ..... Rochester
§Paulson, J. A. ..... Rochester
§Peabody, H. D., Jr. ..... Rochester
Pease, Gertrude L. ..... Rochester
§Pemberton, J. deJ. ..... Rochester
§Pender, J. W. ..... Rochester
§Perkins, R. F. ..... Rochester
§Perry, E. L. ..... Rochester
§Peters, G. A. ..... Rochester
§Petersen, M. C. ..... Rochester
Phares, W. S. ..... Rochester
§Piper, M. C. ..... Rochester
§*Plummer, W. A. ..... Rochester
§Pollack, A. A. ..... Rochester
§Polley, H. F. ..... Rochester
§Pool, T. L. ..... Rochester
§Poore, T. N. ..... Rochester
§Popp, W. C. ..... Rochester
§Porter, C. B. ..... Rochester
§Porter, G. E. ..... Rochester
§Posey, E. L., Jr. ..... Rochester
§Powers, F. H. ..... Rochester
§Prangen, A. D. ..... Rochester
§Pratt, J. H. ..... Rochester
§Prewitt, G. ..... Rochester
§Prickman, L. E. ..... Rochester
§Pridgen, J. E. ..... Rochester
§Priestley, J. T. ..... Rochester
§Prough, W. A. ..... Rochester
§Pruitt, R. D. ..... Rochester
§Pugh, D. G. ..... Rochester

§Putman, H. C., Jr. .....Rochester
Pyle, M. M. .....Cannon Falls
§Rae, J. W., Jr. .....Rochester
§Rall, J. E. .....Rochester
§Ralston, D. E. .....Rochester
§Ramsey, W. H., II .....Rochester
§Randall, L. M. .....Rochester
§Randall, R. V. .....Rochester
§Randall, S. J. .....Rochester
§Randall, W. H. .....Rochester
§Rasmussen, W. C. .....Rochester
§Ratke, H. V. .....Rochester
§ReMine, W. H., Jr. .....Rochester
§Reynolds, J. L. .....Rochester
Rice, R. G. .....Minneapolis
§Ricks, H. C., Jr. .....Rochester
§Riddell, R. V. .....Rochester
§Ridley, Roger W. .....Rochester
Risser, A. F. .....Stewartville
§*Rivers, A. B. .....Rochester
§Roberts, N. J. .....Rochester
Rogers, J. D. .....Rochester
§Rogne, W. G. .....Spring Grove
§Rome, H. P. .....Rochester
Rotnem, O. M. .....Mabel
§Routley, E. F. .....Rochester
‡Rovelstad, R. A. .....Northfield
§Rucker, C. W. .....Rochester
§Ruff, C. C. .....Rochester
§Rulison, E. T., Jr. .....Rochester
§Rydell, J. A. .....Rochester
§Rynearson, E. H. .....Rochester
§Salassa, R. M. .....Rochester
§Sanford, A. H. .....Rochester
§Sanford, R. A. .....Rochester
§Sauer, W. G. .....Rochester
§Saylor, H. L. .....Rochester
Sayre, G. P. .....Rochester
§Scandalis, P. R. .....Rochester
§Scanlon, R. L. .....Rochester
§Scheifley, C. H. .....Rochester
§Schmidt, H. W. .....Rochester
§Schneider, E. P. .....Rochester
§Schweppe, J. S. .....Rochester
§Scribner, B. H. .....Rochester
Seale, Ruth A. .....Rochester
§Seldon, T. H. .....Rochester
§Seybold, W. D. .....Rochester
Shands, W. C. .....Rochester
§Shellito, J. G. .....Rochester
§Shick, R. M. .....Rochester
Short, C. A., Jr. .....Rochester
Shullenberger, C. C. .....Rochester
§Simonton, K. M. .....Rochester
Skaug, H. M. .....Chatfield
Skillern, P. G., Jr. .....Rochester
§Skroch, E. E. .....Rochester
§Sloan, W. P., Jr. .....Rochester
§Slocumb, C. H. .....Rochester
§Smith, D. E. .....Rochester
§Smith, F. L. .....Rochester
§Smith, F. R. .....Rochester
§Smith, H. L. .....Rochester
§Smith, L. A. .....Rochester
§Smith, N. D. .....Rochester
§Smith, O. O., Jr. .....Rochester
§Smith, P. L. .....Rochester
§Snell, A. M. .....Rochester
§Soule, E. H. .....Rochester
§Spaulding, C. A. .....Rochester
Spear, R. C. .....Rochester
§Spence, B. J., Jr. .....Rochester
§Spock, B. M. .....Rochester
§Sprague, R. G. .....Rochester
§Spray, P. .....Rochester
§Spencer, J. R. .....Rochester
§Stark, D. B. .....Rochester
Stark, F. M. .....Rochester
Starks, W. O. .....Rochester
§Stauffer, M. H. .....Rochester
§Stayton, C. A., Jr. .....Rochester
§Stegmaier, O. C., Jr. .....Rochester
§Stevens, J. E., Jr. .....Rochester
§Stickney, J. M. .....Rochester
§Stilwell, G. G. .....Rochester
Stinson, J. C., Jr. .....Rochester
§Storrs, R. P. .....Rochester
Stowe, H. R. .....Rochester
§Stroebel, C. F., Jr. .....Rochester
§Sundberg, C. L. .....Rochester
§†Sutherland, C. G. .....Rochester
§Svien, H. J. .....Rochester
§Takaro, Timothy .....Rochester
§Taylor, A. B. .....Rochester
§Taylor, B. E. .....Rochester
§Taylor, E. R. .....Rochester
Teitgen, R. E. .....Rochester
§Thom, J. G. .....Rochester
§Thompson, G. J. .....Rochester
§Tillisch, J. H. .....Rochester
§Tobin, J. R., Jr. .....Rochester
Tompkins, S. F. .....Rochester
§Tondreau, R. L. .....Rochester
Trandem, C. E. .....Rochester
Turnbull, T. .....Rochester
§Uhler, W. M. .....Rochester
§Uihlein, Alfred .....Rochester
§Underdahl, L. O. .....Rochester
Upshaw, Bette Y. .....Rochester
§Upshaw, Jackson E. .....Rochester
§Vadheim, L. A. .....Rochester
VanCleve, Horatio P., Jr. .....
Dodge Center
§Van Patter, Ward .....Rochester
§Van Herik, Martin .....Rochester
§Vaughn, L. D. .....Rochester
§Wagener, H. P. .....Rochester
§Wakefield, E. G. .....Rochester
§†Wakim, K. G. .....Rochester
§Walsh, M. N. .....Rochester
§Walters, Waltman .....Rochester
Wang, Jun-Chuan .....Minneapolis
§Ward, Louis E. .....Rochester
§Watkins, C. H. .....Rochester
§Watkins, D. H. .....Rochester
§Watson, J. R. .....Rochester
§Watts, W. E. .....Rochester
§Waugh, J. M. .....Rochester
§Webb, J. H. .....Rochester
§Weber, H. M. .....Rochester
§Weed, L. A. .....Rochester
§Weir, J. F. .....Rochester
§Wellman, W. E. .....Rochester
§Wellner, T. O. .....Rochester
Westrup, J. E. .....Lanesboro
White, N. K. .....Rochester
Whitesell, F. B. .....Rochester
§Wilder, R. M. .....Rochester
§Williams, H. L., Jr. .....Rochester
§Williams, R. R., Jr. .....Rochester
†Williams, R. V. .....Rushford
§Willius, F. A. .....Rochester
§Wilmer, H. A. .....Rochester
§Winburn, J. R., Jr. .....Rochester
§Wilson, G. T. .....Rochester
§Wilson, R. B. .....Rochester
Winchester, E. C. .....Rochester
Winchester, W. W. .....Rochester
§Wollaeger, E. E. .....Rochester
§Woltman, H. W. .....Rochester
Wood, G. O. .....Rochester
§Wood, H. G. .....Rochester
§Woodard, D. E. .....Rochester
§Woolling, K. R. .....Rochester
§Woolner, L. B. .....Rochester
§Worden, R. E. .....Rochester
§Young, H. H. .....Rochester
§Zagaria, J. F. .....Rochester
§Zick, L. H. .....Rochester

PARK REGION DISTRICT AND COUNTY MEDICAL SOCIETY

Douglas, Grant, Otter Tail and Wilkin Counties
Regular meetings quarterly
Annual meeting, December
Number of Members: 54

President
Helseth, H. K. .....Fergus Falls
Secretary
Daehlin, Rolf .....Fergus Falls

Arndt, H. W. .....Detroit Lakes
§Baker, A. C. .....Fergus Falls
Baker, J. L. .....Fergus Falls
§Baker, N. H. .....Fergus Falls
Bergquist, K. E. .....Battle Lake
Bigler, Earl E. .....Perham
Bigler, I. E. .....Perham
§Boline, C. A. .....Battle Lake
†Boysen, Peter .....Austin, Texas
§Burnap, W. L. .....Fergus Falls
Cain, J. H. .....Hoffman
§Carlson, C. E. .....Alexandria
§Clifford, G. W. .....Alexandria
§Combacker, L. C. .....Fergus Falls
Daehlin, Rolf .....Fergus Falls
†Drought, W. W. .....Fergus Falls
§Dwinnell, L. A. .....Fergus Falls
Emerson, E. E. .....Osakis
Esser, John .....Perham
§Estrem, C. O. .....Fergus Falls
§Estrem, Ralph .....Fergus Falls
Hanson, E. C. .....New York Mills
§Haskell, A. D. .....Alexandria
§Heiberg, E. A. .....Fergus Falls
Jacobs, G. C. .....Fergus Falls
§Jacobson, C. W. .....Breckenridge
§Kaliher, Howard .....Pelican Rapids
§Korda, H. A. .....Pelican Rapids
Leibold, H. H. .....Parkers Prairie
§Lewis, A. J. .....Henning
Love, F. A. .....Carlos
§Lund, C. J. T. .....Fergus Falls
Miller, W. A. .....New York Mills
§Mouritsen, G. J. .....Fergus Falls
§Naegeli, F. A. .....Fergus Falls
Nelson, R. A. .....Fergus Falls
§Nelson, W. O. B. .....Fergus Falls
§O'Brien, Louis T. .....Breckenridge
Parson, Lillian B. .....Elbow Lake
Parson, L. R. .....Elbow Lake
Patterson, W. L. .....Fergus Falls
§Paulson, T. S. .....Fergus Falls
Randall, A. M. .....Ashby
Reeve, E. T. .....Elbow Lake
Rockwood, P. H. .....Fergus Falls
Satersmoen, Theodore .. Pelican Rapids
§Sather, E. R. .....Alexandria
§Schamber, W. F. .....Parkers Prairie
§Stemsrud, H. L. .....Alexandria
Sutton, H. R. .....Hoffman
§Tanquist, E. J. .....Alexandria
§Thompson, H. B. .....Fergus Falls
Warner, J. J. .....Perham
§Wasson, L. F. .....Alexandria

RAMSEY COUNTY MEDICAL SOCIETY

Regular meetings, last Monday in every month excepting June, July, August
Annual meeting, last Monday in January
Number of Members: 414

President
Aurelius, J. R. .....St. Paul
Secretary
Hilger, L. D. .....St. Paul

§Adair, A. F., Jr. .....St. Paul
§Ahrens, A. E. .....St Paul
§Ahrens, A. H. .....St. Paul
§Alden, J. F., Jr. .....St. Paul
§Arnquist, A. S. .....St. Paul
§Arny, F. P. .....St. Paul
§Arzt, P. K. .....St. Paul
§Aurelius, J. R. .....St. Paul
§Ausman, C. F. .....St. Paul
§Ausman, D. R. .....St. Paul
§Babb, Frank S. .....St. Paul
§Bacon, D. K. .....St. Paul
§†Bacon, L. C. .....St. Paul
§Balcome, M. M. .....St. Paul
Barnett, J. M. .....St. Paul
§Barry, L. W. .....St. Paul
Barsness, N. O. N. .....St. Paul
Barton, J. C. .....Bethesda, Maryland
§†Beals, Hugh .....St. Paul
§Beech, R. H. .....St. Paul
§Beek, H. O. .....St. Paul
Beer, J. J. .....St. Paul
§Bell, C. C. .....St. Paul
§Benepe, J. L. .....St. Paul
†Bennion, P. H. .....Isway, Mont.
§Bentley, N. P. .....St. Paul
Bernstein, W. C. .....St. Paul
§Bicek, J. F. .....St. Paul
Binger, H. E. .....St. Paul
Black, E. J. .....St. Paul
§Bock, R. A. .....St. Paul
Boeckmann, Egil .....St. Paul
§Bolender, H. L. .....St. Paul
Borg, J. F. .....St. Paul
§Bouma, L. R. .....St. Paul
§Brand, G. D. .....St. Paul
Bray, E. R. .....St. Paul
§Briggs, J. F. .....St. Paul
§Broadie, T. E. .....St. Paul
§Brodie, W. D. .....St. Paul
Brotchner, R. J. .....St. Paul
Brown, J. C. .....St. Paul
Bulinski, T. J. .....St. Paul
§Burch, E. P. .....St. Paul
†Burch, Frank .....St. Paul
Burklund, E. C. .....St. Paul
Burlingame, David A. .....St. Paul

§Burns, R. M. ..... St. Paul
Burton, C. G. ..... St. Paul
§Busher, H. H. ..... St. Paul
§Cain, C. L. ..... St. Paul
Callahan, F. F. ..... St. Paul
§Carley, W. A. ..... St. Paul
§Carroll, W. C. ..... St. Paul
§Chadbourn, C. R. ..... St. Paul
§Chatterton, C. C. ..... St. Paul
§Christiansen, A. ..... St. Paul
§Clark, H. B., Jr. ..... Minneapolis
§Cochrane, B. B. ..... St. Paul
Coddon, W. D. ..... St. Paul
§Colby, W. L. ..... St. Paul
§Cole, W. H. ..... St. Paul
†Collie, H. G. ..... St. Paul
Connolly, C. J. ..... St. Paul
§Connor, C. E. ..... St. Paul
§Cook, C. K. ..... St. Paul
§Cooper, C. C. ..... St. Paul
§Countryman, R. S. ..... St. Paul
†Cowern, E. W. ..... No. St. Paul
§Craig, D. M. ..... St. Paul
§Critchfield, L. R. ..... St. Paul
Crombie, F. J. ..... No. St. Paul
Crowley, J. H. ..... St. Paul
§Crump, J. W. ..... St. Paul
§Culligan, J. M. ..... St. Paul
§Culver, L. G. ..... St. Paul

§Dack, L. G. ..... St. Paul
†Daugherty, E. B. ..... Marine-on-St. Croix
§Davis, E. V. ..... St. Paul
Decker, C. H. ..... St. Paul
§Dedolph, Karl ..... St. Paul
§Derauf, B. I. ..... St. Paul
§Deters, D. C. ..... St. Paul
§Dickson, T. H. ..... St. Paul
Donohue, P. F. ..... St. Paul
Dovre, C. M. ..... St. Paul
§Drake, C. B. ..... St. Paul
§Dunn, J. N. ..... St. Paul

§Earl, G. A. ..... St. Paul
§Earl, J. R. ..... St. Paul
*Earl, Robert ..... St. Paul
§Edlund, Gustaf ..... St. Paul
Edwards, J. W. ..... St. Paul
Edwards, Lloyd G. ..... St. Paul
§Edwards, T. J. ..... St. Pau'
§Eginton, C. T. ..... St. Paul
Ely, O. S. ..... So. St. Paul
§Emerson, E. C. ..... St. Paul
§Endress, E. K. ..... St. Paul
Enroth, O. E. ..... St. Paul
Ernest, G. C. H. ..... So. St. Paul
§Ersfeld, Murray P. ..... St. Paul
†Eshelby, E. C. ..... St. Paul
Evert, J. A., Jr. ..... St. Paul
†Fahey, E. W. ..... St. Paul
Farkas, J. B. ..... St. Paul
Felion, A. J. ..... St. Paul
§Ferguson, J. C. ..... St. Paul
§Fessler, H. H. ..... St. Paul
Fink, D. L. ..... St. Paul
Fisher, D. W. ..... St. Paul
§Flanagan, H. F. ..... St. Paul
Flannery, H. F. ..... St. Paul
Flink, E. B. ..... St. Paul
Flom, R. P. ..... St. Paul
§†Fogarty, C. W. ..... St. Paul
Fogarty, C. W., Jr. ..... St. Paul
§Fogelberg, E. J. ..... St. Paul
§Foley, F. E. B. ..... St. Paul
Forsythe, J. R. ..... St. Paul
†Freeman, C. D. ..... Balsam Lake, Wis.
Freeman, C. D., Jr. ..... St. Paul
Freidman, L. L. ..... St. Paul
Fritz, W. L. ..... St. Paul
§Froats, C. W. ..... St. Paul
Frost, Russell H. ..... St. Paul

§Garbrecht, A. W. ..... St. Paul
Gardiner, D. G. ..... St. Paul
§Gardner, W. P. ..... St. Paul
Garrow, D. M. ..... St. Paul
§Geer, E. K. ..... St. Paul
§Gehlen, J. N. ..... St. Paul
§Geist, G. A. ..... St. Paul
§Ghent, Harry ..... St. Paul
§Gibbs, E. C. ..... St. Paul
Gibson, D. P. ..... St. Paul
†Gilfillan, J. S. ..... St. Paul
Gilkey, S. E. ..... St. Paul
§Gillespie, D. R. ..... St. Paul
Gleason, W. A. ..... St. Paul
Goldsmith, J. W. ..... St. Paul
§Goltz, E. V. ..... St. Paul
Goltz, Neill F. ..... St. Paul
Grant, H. W. ..... St. Paul
§Gratzek, Thomas ..... St. Paul
§Grau, R. K. ..... St. Paul
§Gruenhagen, A. P. ..... St. Paul

§Hammes, E. M. ..... St. Paul
§Hammes, E. M., Jr. ..... St. Paul
Hammond, J. F. ..... St. Paul
§Hanson, H. B. ..... St. Paul
§Harmon, G. E. ..... St. Paul
§Hartfiel, W. F. ..... St. Paul
Hartig, Marjorie ..... St. Paul
§Hartley, E. C. ..... St. Paul
§Hassett, M. F. ..... St. Paul
§Hauser, V. P. ..... St. Paul
§Hayes, A. F. ..... St. Paul
§Heck, W. W. ..... St. Paul
Hedenstrom, F. G. ..... St. Paul
Henderson, A. J. G. ..... St. Paul
Hengstler, W. H. ..... St. Paul
§Hensel, C. N. ..... St. Paul
Herman, S. M. ..... St. Paul
Heron, R. C. ..... St. Paul
§Herrmann, E. T. ..... St. Paul
Hertz, M. J. ..... St. Paul
§Hilger, A. W. ..... St. Paul
†Hilger, D. D. ..... St. Paul
*Hilger, L. A. ..... St. Paul
§Hilger, L. D. ..... St. Paul
Hilker, M. D. ..... St. Paul
Hiniker, L. P. ..... St. Paul
§Hochfilzer, J. J. ..... St. Paul
Hodgson, Jane E. ..... St. Paul
§*Hoff, Alfred ..... St. Paul
Holcomb, O. W. ..... St. Paul
§Hollinshead, W. H. ..... St. Paul
§Holmen, R. W. ..... St. Paul
§Holt, J. E. ..... St. Paul
Hopkins, G. W. ..... St. Paul
Howard, M. A. ..... St. Paul
Howard, W. S. ..... St. Paul
Howe, N. W. ..... St. Paul
§Hullsiek, H. E. ..... St. Paul
§Hullsiek, R. B. ..... Minneapolis
Hultgen, W. J. ..... St. Paul
Hurwitz, M. M. ..... St. Paul
§†Ide, A. W. ..... St. Paul
Ikeda, Kano ..... St. Paul
Ingerson, C. A. ..... St. Paul
Jesion, J. W. ..... St. Paul
§Johanson, W. G. ..... St. Paul
§Johnson, A. M. ..... St. Paul
§Johnson, C. E. ..... St. Paul
*Johnson, J. Arthur ..... St. Paul
Jones, E. M. ..... St. Paul
§Kamman, G. R. ..... St. Paul
Kaplan, D. H. ..... St. Paul
Karon, I. M. ..... St. Paul
§Kasper, E. M. ..... St. Paul
§Katz, L. J. ..... St. Paul
†Katzovitz, Hyman ..... St. Paul
Keefe, R. E. ..... St. Paul
§Kelly, J. V. ..... St. Paul
§Kelsey, C. M. ..... St. Paul
§Kenefick, E. V. ..... St. Paul
§Kennedy, W. A. ..... St. Paul
§Kenyon, T. J. ..... St. Paul
§Kesting, Herman ..... St. Paul
King, G. L. ..... St. Paul
§Klein, H. N. ..... St. Paul
§Knutson, G. E. ..... St. Paul
§Kugler, A. A. ..... St. Paul
§Kuske, A. W. ..... St. Paul
Kvitrud, Gilbert ..... St. Paul
§Lannin, B. G. ..... St. Paul
§Larsen, C. L. ..... St. Paul
Larson, Eva-Jane ..... St. Paul
Larson, J. T. ..... South St. Paul
Larson, K. R. ..... St. Paul
Lax, M. H. ..... St. Paul
§Leahy, Bartholomew ..... St. Paul
§Leavenworth, R. O. ..... St. Paul
Lee, N. J. ..... St. Paul
Leick, R. M. ..... St. Paul
§Leitch, Archibald ..... St. Paul
§Lepak, J. A. ..... St. Paul
†Lerche, William ..... Cable, Wis.
§Leven, N. L. ..... St. Paul
§Leverenz, C. W. ..... St. Paul
Levin, Bert ..... St. Paul
Levitt, G. X. ..... St. Paul
§Lick, C. L. ..... St. Paul
Lien, R. J. ..... St. Paul
§Lightbourn, E. L. ..... St. Paul
Lilleberg, N. J. ..... St. Paul
Lippman, H. S. ..... St. Paul
Loken, S. M. ..... St. Paul
Lowe, E. R. ..... So. St. Paul
Lowe, T. A. ..... So. St. Paul
§Lundholm, A. M. ..... St. Paul
§Lynch, F. W. ..... St. Paul
McAdams, J. B. ..... St. Paul
McCain, D. L. ..... St. Paul
McCarthy, J. J. ..... St. Paul
McCarthy, W. R. ..... St. Paul
McClanahan, J. H. ..... White Bear
McClanahan, T. S. ..... White Bear
§McCloud, C. N. ..... St. Paul
§McEwan, Alexander ..... St. Paul
†McLaren, Jennette M. ..... Minneapolis
§Madden, J. F. ..... St. Paul
Madland, Robert S. ..... St. Paul
Maertz, W. F. ..... St. Paul
§Malerich, J. A. ..... St. Paul
Marks, R. W. ..... St. Paul
Martin, D. L. ..... St. Paul
§Martineau, J. L. ..... St. Paul
§Meade, J. R. ..... St. Paul
§Mears, B. J. ..... St. Paul
§Medelman, J. P. ..... St. Paul
Melancon, J. F. ..... St. Paul
Menold, W. F. ..... St. Paul
Merendino, A. A. ..... Seattle, Wash.
Merner, T. B. ..... Minneapolis
§Meyerding, E. A. ..... St. Paul
Michienzi, L. J. ..... St. Paul
§Moga, J. A. ..... St. Paul
Molander, H. A. ..... St. Paul
Moquin, Marie A. ..... St. Paul
Moren, J. A. ..... St. Paul
Moriarty, Berenice ..... St. Paul
Moriarty, Cecile R. ..... St. Paul
Muller, A. E. ..... North St. Paul
§Muller, R. T. ..... St. Paul
Naegeli, A. E. ..... St. Paul
§Nash, L. A. ..... St. Paul
†Nelson, L. A. ..... St. Paul
§*Nichols, A. E. ..... St. Paul
§Noble, J. F. ..... St. Paul
§Noble, J. L. ..... St. Paul
Nuebel, C. J. ..... Hudson
Nye, Katherine A. ..... St. Paul
Nye, Lillian L. ..... St. Paul
O'Brien, J. C. ..... St. Paul
O'Brien, W. M. ..... St. Paul
O'Connor, L. J. ..... St. Paul
§Ockuly, O. E. ..... St. Paul
§Ogden, Warner ..... St. Paul
§Ohage, Justus Jr. ..... St. Paul
O'Kane, T. W. ..... St. Paul
§Olsen, R. L. ..... St. Paul
Olson, C. A. ..... St. Paul
§O'Reilley, B. E. ..... St. Paul
§Ostergren, E. W. ..... St. Paul
§Ouellette, A. J. ..... St. Paul
§Pearson, F. R. ..... St. Paul
§Pearson, M. M. ..... St. Paul
Pedersen, A. H. ..... St. Paul
Peterson, D. B. ..... St. Paul
Peterson, D. H. ..... St. Paul
§Peterson, H. O. ..... St. Paul
§Peterson, J. L. E. ..... St. Paul
§Plondke, F. J. ..... St. Paul
Polski, P. G. ..... South St. Paul
§Prendergast, H. J. ..... St. Paul
Quattlebaum, F. W. ..... St Paul
Radabaugh, R. C. ..... Hastings
§Ralph, J. R. ..... St. Paul
§†Ramsey, W. R. ..... St. Paul
§Rea, C. E. ..... St. Paul
Reid, J. W. ..... St. Paul
§Richards, E. T. F. ..... St. Paul
§Richardson, H. E. ..... St. Paul
§Richardson, R. J. ..... St. Paul
Rick, P. F. W. ..... St. Paul
Rinkey, Eugene ..... St. Paul
§Ritchie, W. P. ..... St. Paul
§Ritt, A. E. ..... St. Paul
§Rogers, S. F. ..... St. Paul
Rolig, D. H. ..... St. Paul
§Rosenthal, Robert ..... St. Paul
§Roth, G. C. ..... St. Paul
Rothschild, H. J. ..... St. Paul
Rowe, C. J., Jr. ..... St. Paul
§Roy, P. C. ..... St. Paul
†Ruhlberg, G. N. ..... Tarzona, Calif.
Rutherford, W. C. ..... Nisswa
Ryan, James D. ..... St. Paul
§Ryan, J. J. ..... St. Paul
§Ryan, J. M. ..... St. Paul
§Ryan, M. E. ..... St. Paul

§Sarnecki, M. M. ..... St. Paul
Savage, F. J. ..... St. Paul
Schmidtke, R. L. ..... St. Paul
Schoch, R. B. J. ..... St. Paul
§Schons, Edward ..... St. Paul
§Schroeckenstein, H. F. ..... St. Paul
§†Schuldt, F. C. ..... St. Paul
§Schulze, A. G. ..... St. Paul
§Schwyzer, H. C. ..... St. Paul
§Scott, E. E. ..... St. Paul
Sekhon, M. S. ..... St. Paul
†Senkler, G. E. ..... St. Paul
§Setzer, H. J. ..... St. Paul
Shannon, W. R. ..... St. Paul
Sheehan, J. R. ..... St. Paul
†Shellman, J. T. ..... Pacific Palisades, Calif.
§Shimonek, S. W. ..... St. Paul
Short, Jacob ..... St. Paul
Siegel, Clarence ..... St. Paul
§Simons, L. T. ..... St. Paul
Singer, B. J. ..... St. Paul
†Skinner, H. O. ..... St. Paul
§Smisek, E. A. ..... St. Paul
§Smith, V. D. E. ..... St. Paul
§Snyder, G. W. ..... St. Paul

§Sohlberg, O. I.....St. Paul
§Sommers, Ben.....St. Paul
§Sorem, M. B.....St. Paul
Soucheray, P. H. .....St. Paul
§Souster, B. B.....St. Paul
§Sprafka, J. M.....St. Paul
§Steinberg, C. L.....St. Paul
§Sterner, E. G.....St. Paul
§Sterner, E. R.....St. Paul
Sterner, J. J. .....St. Paul
§Sterner, O. W.....St. Paul
Stewart, Alexander.....St. Paul
Stolpestad, A. H.....St. Paul
§Stolpestad, H. L.....St. Paul
§Strate, G. E.....St. Paul
Straus, M. L.....St. Paul
Strem, E. L.....St. Paul
Sturley, Rodney F.....St. Paul
Swanson, J. A.....St. Paul
§Swendson, J. J.....St. Paul

§Teisberg, C. B.....St. Paul
§Teisberg, J. E.....St. Paul
Thompson, F. A.....St. Paul
Thoreson, M. C. Bernice..So. St. Paul
Tifft, C. R.....St. Paul
§Tracht, R. R.....St. Paul
Travis, J. S.....St. Paul
§Tregilgas, H. R.....So. St. Paul
Varco, R. L.....St. Paul
Veirs, Dean.....St. Paul
Veirs, Ruby J. S.....St. Paul
§Venables, A. E.....St. Paul
§Von der Weyer, W. H.....St. Paul
§Waas, C. W.....St. Paul
§Walker, A. E.....St. Paul
§Walter, C. W.....St. Paul
§†Ward, P. D.....St. Paul
Warren, C. A.....St. Paul
Watson, P. T. .....St. Paul
Watson, W. J. .....Newport
Watz, C. E.....St. Paul

§Webber, F. L.....St. Paul
§Weis, B. A.....St. Paul
§Weisberg, Maurice.....St. Paul
§Wenzel, G. P.....St. Paul
Werner, O. S.....Cambridge
†Wheeler, M. W. .....Lake Elmo
†Whitacre, J. C.....St. Paul
Williams, A. B.....St. Paul
§Williams, C. K.....St. Paul
§Williams, J. A.....St. Paul
§Wilson, J. A.....St. Paul
§Wilson, J. V.....St. Paul
Winnick, J. B.....St. Paul
§Wold, K. C.....St. Paul
§Wolff, H. J.....St. Paul
Wolkoff, H. J.....St. Paul
Word, H. L.....St. Paul
Youngren, E. R.....St. Paul
Zachman, L. L.....St. Paul
§Zimmermann, H. B.....St. Paul

RED RIVER VALLEY MEDICAL SOCIETY

Kittson, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake and Roseau Counties

Regular meetings quarterly—Annual meeting, December

Number of Members: 59

President
Sather, Geo. .....Fosston

Secretary
Sather, R. O.....Crookston

Adkins, C. M. .....Thief River Falls
Anderson, W. E.....Clearbrook
§Bechtel, M. J.....Warren
§Behr, O. K.....Crookston
Berge, D. O.....Roseau
Berlin, A. S.....Hallock
†§Bertelsen, O. L. .....Crookston
Biedermann, Jacob..Thief River Falls
§Boynton, Bruce .....Ada
Brink, A. A.....Baudette
Brown, L. L. .....Crookston
§Cameron, J. H. .....Crookston
§Canfield, A. .....Thief River Falls
Carlson, A. E.....Warren
§Covey, K. W. .....Mahnomen
Dale, L. M. .....Red Lake Falls

Danford, K. A. .....Mahnomen
Delmore, John L.....Roseau
§Delmore, John L., Jr. .....Roseau
Delmore, R. J.....Roseau
§Erickson, Eskil.....Halstad
Feigal, W. M. .....Thief River Falls
Haberle, C. A. ....Thief River Falls
§Henney, W. H.....McIntosh
Hollands, W. H.....Fisher
§Holmstrom, C. H. .....Warren
Janecky, A. G.....Warroad
§Janssen, M. E. .....Crookston
Johnson, E. A. .....Thief River Falls
Johnson, H. C.....Thief River Falls
Johnson, R. E.....Crookston
Juergens, M. F. ....Thief River Falls
§Klefstad, L. H. .....Greenbush
Knutson, G. A.....Hallock
§Kostick, W. R.....Fertile
§Loken, Theodore.....Ada
Lynde, O. G. .....Thief River Falls

§Mercil, W. F.....Crookston
Nelson, A. S.....Thief River Falls
Nietfeld, A. B. .....Warren
§Norman, J. F.....Crookston
§Oppegaard, C. L.....Crookston
§Oppegaard, M. O.....Crookston
Parsons, J. G. .....Crookston
Pearson, L. O.....Warroad
§Pumala, E. F. .....Warren
§Reff, A. R.....Crookston
§Roholt, H. B. .....Fosston
§Rydland, A. D.....Crookston
†Sather, Allen.....Fosston
§Sather, G. A.....Fosston
§Sather, R. O.....Crookston
§Skogerboe, R. B. .....Karlstad
§Starekow, M. D. ..Thief River Falls
Stone, Norman F. .....Gonvick
†Torgerson, W. B. .....Oklee
§Uhley, C. G.....Crookston
§Zorn, E. L. .....Erskine

RENVILLE COUNTY MEDICAL SOCIETY

Regular meetings, second Tuesday of month

Annual meeting, November

Number of Members: 20

President
Ceplecha, S. F. .....Redwood Falls

Secretary
Hinz, Walter .....Bird Island

§Adams, R. C.....Bird Island
§Anderson, C. A. .....Hector
§Anderson, Donald C. .....Olivia
§Billings, R. E.....Franklin

§Brand, W. A.....Redwood Falls
§Ceplecha, S. F.....Redwood Falls
§Cosgriff, J. A.....Olivia
§Dordal, J.....Sacred Heart
§Fawcett, A. M.....Renville
Flinn, T. E. .....Remer
§Gaines, E. C.....Buffalo Lake
Heinz, I. B.....Shakopee
Heinz, L. H.....Shakopee

§Hinz, W. E.....Bird Island
§Johnson, O. H.....Redwood Falls
§Johnson, W. E.....Morgan
Lenz, J. R.....Morton
McLeod, John .....Olivia
§*Passer, A. A. .....Olivia
Potthoff, C. J.....Washington, D. C.
Priesinger, J. W.....Renville

RICE COUNTY MEDICAL SOCIETY

Regular meetings, at call

Annual meeting, January

Number of Members: 16

President
Francis, D. W. .....Morristown

Secretary
§Studer, D. J. .....Faribault

§Engberg, E. J.....Faribault
Francis, D. W.....Morristown

§Kennedy, G. L.....Faribault
Kolars, J. J. .....Faribault
§Lende, Norman.....Faribault
Lexa, F. J.....Lonsdale
§Robilliard, C. M.....Faribault
Rohrer, C. A.....Waterville
Rumpf, C. W.....Faribault

†Rumpf, W. H.....Faribault
§Street, Bernard.....Northfield
§Studer, D. J.....Faribault
Traeger, C. A.....Faribault
§Weaver, P. H.....Faribault
West, E. J. .....Fort Thomas, Ky.
Wilkinson, S. L. .....Faribault

ST. LOUIS COUNTY MEDICAL SOCIETY

Carlton, Cook, Itasca, Lake and St. Louis Counties

Regular meetings, second Thursday every month except July and August

Annual meeting, December

Number of Members: 237

President
Tibbetts, M. H. .....Duluth

Secretary
Johnson, K. E. .....Duluth

§Abraham, A. L.....Duluth
§Adams, B. S.....Hibbing
Addy, E. R.....Gilbert
Anderson, C. L.....Ely
§Arko, J. L.....Hibbing
§Armstrong, E. L.....Duluth
§Athens, A. G.....Duluth
Atmore, W. G. .....Duluth
§Bachnik, F. W.....Hibbing
§Backus, R. W.....Nopeming
§Bagley, C. M.....Duluth
Bagley, Elizabeth C.....Duluth
§Bagley, W. R.....Duluth
Baich, V. M.....Bovey

§Bakkila, H. E.....Duluth
§Bardon, Richard.....Duluth
§Barker, J. D.....Duluth
Barney, L. A.....Duluth
§Barrett, E. E.....Duluth
§Becker, F. T.....Duluth
Bepko, Marie K.....Cloquet
Berdez, G. L.....Duluth
Bergen, R. O. .....Duluth
§Bianco, A. J.....Duluth
†Binet, H. E.....Grand Rapids
§Blackmore, S. C.....Biwabik
Bolz, J. A.....Grand Rapids
Boman, P. G. .....Duluth
§Booren, J. C. .....Duluth
§Bowen, R. L.....Hibbing
§Boyer, S. H., Jr.....Duluth
Boyer, S. H., Sr.....Duluth
Braun, O. C. .....Nashwauk

Bray, K. E. .....Evansville, Ind.
§Bray, P. N.....Duluth
§Bray, R. B.....Biwabik
Brooker, W. J. .....Duluth
§Buckley, R. P.....Duluth
§Butler, J. K.....Carlton
Cantwell, W. F....International Falls
§Carpenter, R. E. .....Duluth
Chapman, T. L.....Duluth
§Chermak, F. G.....International Falls
§Christensen, C. H.....Duluth
§Clark, I. T.....Duluth
§Coll, J. J.....Duluth
†Collins, A. N. .....Moose Lake
†Collins, H. C.....Duluth
§Coventry, W. A.....Duluth
§Coventry, W. D.....Duluth
Dahlin, I. T.....Aurora
§Dickson, F. H., Jr.....Proctor

§Dittrich, R. J. ..... Duluth
§*Doolittle, L. E. ..... Duluth
Doyle, G. C. ..... Duluth
§Eckman, P. F. ..... Duluth
§Eckman, R. J. ..... Duluth
§Eisenman, Walter ..... Coleraine
§Ekblad, J. W. ..... Duluth
§Elias, F. J. ..... Duluth
§Emanual, K. W. ..... Duluth
Eppard, R. M. ..... Cloquet
§Erskine, G. M. ..... Grand Rapids
§Estrem, T. A. ..... Hibbing
§Ewens, H. B. ..... Virginia
§Fawcett, K. R. ..... Duluth
§Fellows, M. F. ..... Duluth
Ferrell, C. R. ..... Grand Rapids
§Fischer, M. McC. ..... Duluth
§Fisketti, Henry ..... Duluth
§Flynn, B. F. ..... Hibbing
Fortier, R. G. ..... Marble
§Fredericks, M. G. ..... Duluth
§Gillespie, M. G. ..... Duluth
§Goldish, D. R. ..... Duluth
§Goodman, C. E. ..... Virginia
§Gowan, L. R. ..... Duluth
§Grahek, J. P. ..... Ely
§Graves, W. N. ..... Duluth
Grinley, A. V. ..... Grand Rapids

§Haavik, J. E. ..... Duluth
Halbert, J. J. ..... Duluth
Halme, W. B. ..... Cloquet
Haney, C. L. ..... Duluth
§Hansen, R. E. ..... Hibbing
§Hanson, E. O. ..... Cloquet
§Harris, C. N. ..... Hibbing
§Hatch, W. E. ..... Duluth
§Hayes, M. F. ..... Nashwauk
§Hedberg, G. A. ..... Nopeming
Heiam, W. C. ..... Cook
§Hilding, A. C. ..... Duluth
Hill, F. E. ..... Duluth
Hirschboeck, F. J. ..... Duluth
§Hoff, H. O. ..... Duluth
§Houkom, S. S. ..... Duluth
Hutchinson, Henry ..... Moose Lake
§Jacobson, Clarence ..... Chisholm
§Jacobson, F. C. ..... Duluth
§Jensen, T. J. ..... Duluth
§Jeronimus, H. J. ..... Duluth
§Jessico, C. M. ..... Duluth
§Joffe, H. H. ..... Duluth
§Johnson, K. E. ..... Duluth
§Johnsrud, L. W. ..... Chisholm
§Jolin, F. M. ..... Bovey
§Kelly, A. C. ..... Duluth
§Klein, Harry ..... Duluth
§Klein, W. A. ..... Duluth
§Knapp, F. N. ..... Duluth
§Knoll, W. V. ..... Duluth
§Kohlbry, C. O. ..... Duluth
§Koskela, A. L. ..... Deer River
Koskela, L. E. ..... Deer River
§Kotchevar, F. R. ..... Eveleth

§Krueger, V. R. ..... Nopeming
§La Bree, R. H. ..... Duluth
§Laird, A. T. ..... Duluth
Latterell, K. E. ..... Duluth
Lepak, F. J. ..... Duluth
§Litman, S. N. ..... Duluth
§†Loofbourrow, E. H. ..... Keewatin
§Luth, D. V. ..... Duluth
†McCarty, P. D. ..... Ely
†McCoy, Mary K. ..... Duluth
McDonald, A. L. ..... Duluth
§McHaffie, O. L. ..... Duluth
McKenna, M. J. ..... Grand Rapids
§McLeod, J. L. ..... Grand Rapids
§McNutt, J. R. ..... Duluth
MacDonald, R. A. ..... Littlefork
§Macfarlane, P. H. ..... Chisholm
§MacRae, G. C. ..... Duluth
§Magney, F. H. ..... Duluth
Magraw, R. M. ..... St. Paul
§Malmstrom, J. A. ..... Virginia
†Marcley, W. J. ..... Minneapolis
§Martin, W. C. ..... Duluth
§Mayne, R. M. ..... Nopeming
Mead, C. H. ..... Duluth
§Merriman, L. L. ..... Duluth
§Meyer, J. O. ..... Grand Rapids
§Minty, E. W. ..... Duluth
§Moe, R. J. ..... Duluth
Moe, Thomas ..... Moose Lake
§Moehring, H. G. ..... Duluth
Mollers, T. P. ..... Soudan
Monroe, P. B. ..... Cloquet
Monserud, N. O. ..... Cloquet
§Morsman, L. W. ..... Hibbing
Mueller, Selma C. ..... Duluth
§Murray, R. A. ..... Hibbing
§Neff, W. S. ..... Virginia
Nelson, L. S. ..... Minneapolis
§Nelson, R. L. ..... Duluth
§Nicholson, M. A. ..... Duluth
Norberg, C. E. ..... Cloquet
§Nutting, R. E. ..... Duluth
§Olson, A. E. ..... Duluth
Olson, A. O. ..... Duluth
§O'Neill, J. C. ..... Duluth
Palmer, H. A. ..... Blackduck
Papermaster, Ralph ..... Two Harbors
†Parker, O. W. ..... Ely
§Parson, E. I. ..... Duluth
Pasek, A. W. ..... Cloquet
§Patch, O. B. ..... Duluth
Patey, R. T. ..... Buhl
Patterson, S. A. ..... Philadelphia, Pa.
Pearsall, R. P. ..... Virginia
§Pederson, R. C. ..... Duluth
Pennie, D. F. ..... Duluth
Peterson, E. N. ..... Virginia
Peterson, J. H. ..... Duluth
§Power, J. E. ..... Duluth
Puumala, R. H. ..... Cloquet
§Raadquist, C. S. ..... Hibbing
§Raihala, John ..... Virginia

§Raiter, R. F. ..... Cloquet
§Reed, Paul ..... Virginia
†Robinson, J. M. ..... Goshen, N. Y.
§Rokala, H. E. ..... Virginia
§†Rood, D. C. ..... Duluth
Rowe, O. W. ..... Duluth
§Rowles, E. K. ..... Coleraine
§Rudie, P. S. ..... Duluth
§Runquist, J. M. ..... Duluth
Ryan, W. J. ..... Duluth
Sach-Rowitz, Alvin ..... Moose Lake
§Salter, R. A. ..... Virginia
Sandell, S. T. ..... Nopeming
§Sarff, O. E. ..... Duluth
Sax, M. H. ..... Duluth
Sax, S. G. ..... Duluth
Schirber, M. J. ..... Grand Rapids
§Schneider, L. E. ..... Duluth
§Schroder, C. H. ..... Duluth
Schweiger, T. R. ..... Hibbing
§Seashore, R. T. ..... Duluth
†Shaw, A. W. ..... Virginia
§Sher, D. A. ..... Virginia
Siegel, J. S. ..... Virginia
§Sinamark, Andrew ..... Hibbing
Sisler, C. E. ..... Grand Rapids
§Smith, C. M. ..... Duluth
Smith, W. R. ..... Grand Marais
Snyker, O. E. ..... Ely
§Spang, A. J. ..... Duluth
§Spang, J. S. ..... Duluth
§Spicer, F. W. ..... Duluth
*†Spurbeck, R. G. ..... Cloquet
§Strathern, M. L. ..... Gilbert
§Strauss, E. C. ..... Duluth
§Strobel, W. G. ..... Duluth
Stuart, A. B. ..... Cloquet
§Sutherland, H. N. ..... Ely
Swedberg, W. A. ..... Duluth
§Swenson, A. O. ..... Duluth

§†Taylor, C. W. ..... Duluth
§Teich, K. W. ..... Duluth
§Terrell, B. J. ..... Nopeming
§Tibbetts, M. H. ..... Duluth
*Tilderquist, D. L. ..... Duluth
§Tingdale, Carlyle ..... Hibbing
Tosseland, Noel E. ..... Duluth
§Tuohy, E. L. ..... Duluth

§Urberg, S. E. ..... Duluth
Van Ryzin, D. J. ..... Duluth
§Van Valkenberg, J. D. ..... Floodwood
§Walder, H. J. ..... Duluth
†Walker, A. E. ..... Duluth
§Wallace, M. O. ..... Duluth
Walter, F. H. ..... International Falls
§Wells, A. H. ..... Duluth
§Wheeler, D. W. ..... Duluth
§Williams, B. F. P. ..... Duluth
Winter, J. A. ..... Duluth
§Ylitalo, W. H. ..... Hibbing
§Young, T. O. ..... Duluth
†Zlatovski, M. L. ..... Duluth

SCOTT-CARVER COUNTY MEDICAL SOCIETY

Regular meetings, second Tuesday of the alternate months
Annual meeting, June
Number of Members: 27

President
Pearson, B. F. ..... Shakopee
Secretary
Schimelpfenig, G. T. ..... Chaska

†Ahrens, Curtis F. ..... Galveston, Texas
Bratholdt, J. W. ..... Watertown
§Buck, F. H. ..... Shakopee
§Cervenka, C. F. ..... New Prague
§Doherty, E. M. ..... New Prague
§Hass, F. M. ..... Jordan

§Havel, H. W. ..... Jordan
§Hebeisen, M. B. ..... Chaska
§Juergens, H. M. ..... Belle Plaine
Klein, J. C. ..... Shakopee
§Kortsch, F. P. ..... Prior Lake
§Kucera, S. T. ..... Northfield
Larson, Loren J. ..... Watertown
Martin, T. P. ..... Arlington
Nagel, H. D. ..... Waconia
Ninneman, N. N. ..... Waconia
Novak, E. E. ..... New Prague

Olson, C. J. ..... Belle Plaine
§Pearson, B. F. ..... Shakopee
§Pearson, R. T. ..... Shakopee
Pogue, R. E. ..... Watertown
§Ponterio, J. E. ..... Shakopee
§Rynda, E. R. ..... New Prague
Schimelpfenig, G. T. ..... Chaska
§Simons, B. H. ..... Chaska
§†Westerman, A. E. ..... Montgomery
§Westerman, F. C. ..... Montgomery

SOUTHWESTERN MINNESOTA MEDICAL SOCIETY

Cottonwood, Jackson, Murray, Nobles, Pipestone and Rock Counties
Regular meetings, at call
Annual meeting, October
Number of Members: 62

President
Lohmann, John ..... Pipestone
Secretary
Mork, B. O., Jr. ..... Worthington

Anderson, O. W. ..... Luverne
§Arnold, E. W. ..... Adrian
§Balmer, A. I. ..... Pipestone
§Basinger, H. P. ..... Windom
Basinger, H. R. ..... Mountain Lake
§Beckering, Gerrit ..... Edgerton
§Benjamin, W. G. ..... Pipestone
Benton, D. W. ..... Worthington
Bofenkamp, F. W. ..... Luverne
†Brown, A. H. ..... Pipestone
§Burleigh, J. S. ..... Luverne

§Carlson, J. V. ..... Westbrook
§Christiansen, H. A. ..... Jackson
§Chunn, S. S. ..... Pipestone
§DeBoer, Hermanus ..... Edgerton
§Doman, V. W. ..... Lakefield
Doms, H. C. A. ..... Slayton
Doms, V. A. ..... Slayton
§Hallin, R. P. ..... Worthington
§Halloran, W. H. ..... Jackson
§Halpern, D. J. ..... Brewster
§Harrison, P. W. ..... Worthington
Hebbel, Robert ..... Minneapolis
§Heiberg, O. M. ..... Worthington
Hill, W. C. ..... Windom
§Hitchings, W. S. ..... Lakefield
§Hoyer, L. J. ..... Windom

§Johnson, M. A. ..... Storden
§Karleen, B. N. ..... Jackson
§Kilbride, E. A. ..... Worthington
†Kilbride, J. S. ..... Worthington
§Kotval, R. J. ..... Pipestone
§Laikola, L. A. ..... Adrian
§Lohmann, J. G. ..... Pipestone
§Maitland, E. T. ..... Jackson
†Manson, F. M. ..... Worthington
§*Mork, B. O., Sr. ..... Worthington
§Mork, B. O., Jr. ..... Worthington
§Nealy, D. E. ..... Adrian
§Nickerson, J. R. ..... Heron Lake
§Pankratz, P. J. ..... Mountain Lake
§Patterson, H. D. ..... Slayton

§Pierson, R. F.....Slayton
§Piper, W. A.....Mountain Lake
Robinett, R. W.....Worthington
§Rose, J. T.....Lakefield
§Schade, F. L.....Worthington
Schmidt, J. R.....Mountain Lake
§Schutz, E. S.....Mountain Lake
Sherman, C. L.....Luverne
§Slater, S. A.....Worthington
§Sogge, L. L.....Windom
§Sorum, F. T.....Jasper
§Stam, John.....Worthington
Stanley, C. R.....Worthington
Stevenson, B. M.....Fulda
Stratte, H. C.....Windom
§Wells, W. B.....Jackson
§Williams, C. A.....Pipestone
Williams, L. A.....Slayton
§Williamson, H. A.....Heron Lake
Wisness, O. A.....Slayton
Wolff, Helen B.....Worthington

STEARNS-BENTON COUNTY MEDICAL SOCIETY

Regular meetings, third Thursday of month
Annual meeting, third Thursday of December
Number of Members: 65

President
Evans, L. M.....St. Cloud
Secretary
Libert, J. N.....St. Cloud

§Baumgartner, F. H.....Albany
§Beuning, J. B.....St. Cloud
Brigham, C. F.....St. Cloud
Brigham, C. F., Jr.....St. Cloud
Broker, H. M.....Eden Valley
§Buscher, J. C.....St. Cloud
§Clark, H. B.....St. Cloud
Cleaves, W. D.....Sauk Center
§Conway, J. E.....St. Cloud
§Donaldson, C. S.....Foley
Du Bois, J. F.....Sauk Center
Engstrom, G. F.....Belgrade
§Evans, L. M.....Sauk Rapids
§Fleming, T. N.....St. Cloud
§Friesleben, William.....Sauk Rapids
§Gaida, J. B.....St. Cloud
§Goehrs, G. H.....St. Cloud
Goehrs, H. W.....St. Cloud
§Grant, J. C.....Sauk Center
§Haberman, Emil.....Osakis
§Halenbeck, P. L.....St. Cloud
§Hall, W. E.....Maple Lake
†Hemstead, Werner.....Minneapolis
§Henry, C. J.....Milaca
Henry, J. E.....Milaca
§Jones, R. N.....St. Cloud
Kaplan, H. A.....Kimball
§Kelly, J. F.....Cold Springs
*Kettlewell, R. B.....Sauk Center
§Kohler, D. W.....St. Joseph
§Koop, S. H.....Richmond
Kosiak, Wm.....Milaca
§Kuhlman, L. B.....Melrose
Lewis, C. B.....St. Cloud
§Libert, J. N.....St. Cloud
§Luckemeyer, C. J.....St. Cloud
§McDowell, J. P.....St. Cloud
§Mahowald, A.....Albany
Meyer, A. A.....Melrose
§Milhaupt, E. N.....St. Cloud
§Murphy, James E.....St. Cloud
Musachio, N. F.....Foley
Myre, C. R.....Paynesville
§Nessa, C. B.....St. Cloud
§O'Keefe, J. P.....St. Cloud
O'Leary, J. H.....St. Paul
§Petersen, R. T.....St. Cloud
Petkevich, F. M.....St. Cloud
Phares, Otto C.....St. Cloud
§Raetz, S. J.....Maple Lake
§Richards, W. B.....St. Cloud
§Reif, H. J.....St. Cloud
§Sandven, N. O.....Paynesville
§Schatz, F. J.....St. Cloud
§Schmitz, E. J.....Holdingford
Sherwood, G. E.....Kimball
Sisk, H. E.....St. Cloud
§Smith, R. C.....Holdingford
Stangl, P. E.....St. Cloud
Veranth, L. A.....St. Cloud
§Vrtiska, F. L.....St. Cloud
§Walfred, K. A.....St. Cloud
§Wenner, W. T.....St. Cloud
§Wetzel, E. V.....St. Cloud
§Wittrock, L. H.....Watkins
Zachman, A. H.....Melrose

STEELE COUNTY MEDICAL SOCIETY

Regular meetings, at call
Annual meeting, January
Number of Members: 19

President
McIntyre, John A.....Owatonna
Secretary
Olson, A. J.....Owatonna

Anderson, F. C.....Owatonna
Berghs, L. V.....Owatonna
Dewey, D. H.....Owatonna
Ertel, E. O.....Ellendale
§Hartung, E. H.....Claremont
Kurtin, H. J.....Blooming Prairie
Lundquist, C. W.....Owatonna
McEnaney, C. T.....Owatonna
McIntyre, J. A.....Owatonna
Melby, Benedik.....Blooming Prairie
Moorhead, D. E.....Owatonna
§Nelson, E. J.....Owatonna
Olson, A. J.....Owatonna
Peterson, W. H.....Owatonna
Roberts, O. W.....Owatonna
Schaefer, J. F.....Owatonna
Senn, E. W.....Owatonna
Stransky, T. W.....Owatonna
§Wilkowske, R. J.....Owatonna

UPPER MISSISSIPPI MEDICAL SOCIETY

Aitkin, Beltrami, Cass, Clearwater, Crow Wing, Hubbard, Koochiching,
Lake of the Woods, Morrison, Todd and Wadena Counties
Regular meetings, Spring, Summer, Fall, Winter
Annual meeting, January
Number of Members: 84

President
Johnson, D. L.....Little Falls
Secretary
Badeaux, G. I.....Brainerd

§Anderson, Werner.....Brainerd
§Badeaux, G. I.....Brainerd
Beise, R. A.....Brainerd
Bender, J. H.....Brainerd
§Borgerson, A. H.....Long Prairie
Cardle, G. E.....Brainerd
Closuit, F. C.....Aitken
Cook, J. M.....Staples
Coombs, C. H.....Cass Lake
†Corrigan, J. E.....Spooner
§Crow, E. R.....Ah-Gwah-Ching
§Davis, L. F.....Wadena
Davis, L. T.....Wadena
Davis, T. C.....Wadena
Davis, T. L.....Wadena
§Dewesse, W. J.....Bemidji
Eiler, John.....Park Rapids
§Erickson, Alvin.....Long Prairie
Fait, R. V.....Little Falls
§Fine, B. A.....Crosby
Fitzsimmons, W. E.....Brainerd
Fortier, G. M. A.....Wadena
Garlock, D. H.....Bemidji
Gerber, M. P.....Brainerd
Ghostley, Mary C.....Puposky
†Gilmore, Rowland.....Bemidji
Groschupf, T. P.....Bemidji
§Grose, F. N.....Clarissa
§Hanover, R. D.....Little Fork
Hendricks, E. J.....St. Paul
§Hoganson, D. E.....Bemidji
†House, Z. E.....Burbank, Calif.
Hubbard, O. E.....Brainerd
*Jamison, E. F.....Brainerd
†Johnson, C. E.....St. Paul
§Johnson, D. L.....Little Falls
Johnson, E. W.....Bemidji
Johnstone, W. W.....Ah-Gwah-Ching
Knight, E. G.....Swanville
Larson, Leroy.....Bagley
Laughlin, J. T.....Grey Eagle
Lee, H. W.....Brainerd
Leemhuis, G. H.....Aitken
§Lenarz, A. J.....Browerville
Longfellow, Helen B.....Brainerd
Lund, W. J.....Staples
Mark, Hilbert.....Minneapolis
McCann, D. F.....Bemidji
§McGeary, M. D.....Brainerd
McLane, Wm. O.....Wadena
§Mosby, M. E.....Long Prairie
§Mulligan, A. M.....Brainerd
Nelson, Bernette G.....Menahga
Nelson, Bernice A.....Menahga
Nelson, N. P.....Brainerd
Nixon, James B.....Crosby
Nolan, D. E.....Dayton, Ohio
Olson, Lillian.....Ah-Gwah-Ching
§Parker, Warren E.....Sebeka
Petraborg, Harvey T.....Aitkin
Pierce, C. H.....Wadena
Pierce, R. B.....Wadena
Potek, D. M.....International Falls
Quanstrom, V. E.....Brainerd
†Ratcliffe, J. J.....Aitkin
Rice, H. G.....Aitkin
Ringle, O. F.....Walker
Rozycki, A. T.....Pine River
Sanderson, A. G.....Deerwood
§Simons, E. J.....Swanville
Smith, B. A.....Crosby
§Stein, R. J.....Pierz
§Thabes, J. A., Sr.....Brainerd
Thabes, J. A., Jr.....Brainerd
Vandersluis, C. W.....Bemidji
Watson, A. M.....Royalton
†Watson, J. D.....Minneapolis
Watson, P. T.....Minneapolis
Watson, S. W.....Royalton
Whittemore, D. D.....Bemidji
§Will, C. B.....Bertha
§Will, W. W.....Bertha
Wilson, V. O.....Rochester
Wingquist, C. G.....Crosby
*Withrow, M. E.....International Falls
Zeigler, C. M.....Pequot Lakes

WABASHA COUNTY MEDICAL SOCIETY

Regular meetings, Spring and Fall
Annual meeting, first Thursday after first Monday in October
Number of Members: 15

President
Wellman, T. G.....Lake City
Secretary
Wilson, W. F.....Lake City

§Bayley, E. C.....Lake City
§Bouquet, B. J.....Wabasha
§Bowers, R. N.....Lake City
Collins, J. S.....Wabasha
§Ekstrand, L. M.....Wabasha
§Ellis, E. W.....Elgin
§Flesche, B. A.....Lake City
§Gjerde, W. P.....Lake City
Glabe, R. A.....Plainview
Holt, G. W.....Fort Logan, Colo.
§Mahle, D. G.....Plainview
§Ochsner, C. G.....Wabasha
†Replogle, W. H.....Los Angeles, Calif.
§Wellman, T. G.....Lake City
†Wilson, W. F.....Lake City

WASECA COUNTY MEDICAL SOCIETY

Regular meetings, every six months
Annual meeting, January
Number of Members: 8

President
Hottinger, R. C.....Janesville
Secretary
Wadd, C. T. .....Janesville

§Davis, R. D.....Waseca
§Gallagher, B. J.....Waseca
§Hottinger, R. C.....Janesville
§McIntire, H. M.....Waseca
§Oeljen, S. C. G.....Waseca
§Olds, G. H.....New Richland
§Swenson, O. J.....Waseca
§Wadd, C. T.....Janesville

WASHINGTON COUNTY MEDICAL SOCIETY

Regular meetings, Second Tuesday in each month, except June, July, August
Annual meeting, second Tuesday in December
Number of Members: 16

President
Humphrey, W. R. .....Stillwater
Secretary
§Boleyn, E. S.....Stillwater
Burseth, E. C. .....Forest Lake

§Carlson, R. E.....Stillwater
§†Haines, J. H.....Stillwater
Holcomb, J. T...Marine-on-St. Croix
Humphrey, W. R.....Stillwater
§Jenson, J. E. .....Stillwater
Johnson, R. G. .....Stillwater
§Josewski, R. J.....Stillwater
Knudson, R. A. .....Forest Lake
§McCarten, F. M.....Stillwater
Poirier, J. A.....Forest Lake
Ruggles, G. M.....Forest Lake
§Sherman, C. H.....Bayport
§Stuhr, J. W.....Stillwater
Van Meier, Henry.....Stillwater

WEST CENTRAL MINNESOTA MEDICAL SOCIETY

Big Stone, Pope, Stevens, and Traverse Counties
Regular meetings, March, May, September and November
Annual meeting, November
Number of Members: 29

President
Wagner, Norman W. .....Graceville
Secretary
Rossberg, Raymond .....Morris

§Arneson, A. I.....Morris
§Barnett, G. L.....Graceville
§Behmler, F. W.....Morris
§Bergan, Otto.....Clinton
†Bolsta, Charles.....Ortonville
§†Eberlin, E. A. .....Glenwood

§Elsey, E. M.....Glenwood
†Elsey, J. R. .....Glenwood
†Fitzgerald, E. T. .....Morris
§Gericke, J. T., Jr. .....Glenwood
§Giesen, A. F.....Starbuck
Hedemark, H. H.....Ortonville
Hedemark, T. A.....Ortonville
§Karn, J. F.....Ortonville
§Lindberg, A. L. .....Wheaton
§†Linde, Herman .....Cyrus
Magnuson, A. E.....Wheaton
McIver, B. A. .....Lowry
§Merrill, R. W.....Morris
Muir, W. F. .....Browns Valley
§O'Donnell, D. M.....Ortonville
§Oliver, I. L.....Graceville
§Plasha, M. K. .....Lowry
Ransom, M. L.....Hancock
§Rossberg, Raymond A.....Morris
§Rydburg, W. C.....Brooten
§Swedenburg, P. A. .....Glenwood
§Turbak, C. E. .....Herman
§Wagner, N. W. .....Graceville

WINONA COUNTY MEDICAL SOCIETY

Regular meetings, first Monday in January, April, July, October
Annual meeting, first Monday in January
Number of Members: 31

President
Vollmer, F. J. .....Winona
Secretary
Schmidt, H. R. .....Winona

§Benoit, F. T.....Winona
§Boardman, D. V.....Winona
§Canfield, W. W.....Houston
§Christensen, E. E. .....Winona
§Hamlon, J. S.....St. Charles
Heise, Carl .....Winona
§Heise, Herbert.....Winona

§Heise, Paul.....Winona
Heise, Philip .....Winona
§†Heise, W. F. C.....Winona
§Heise, W. V.....Winona
§Johnston, L. F.....Winona
Keyes, J. D.....Winona
§Loomis, G. L.....Winona
§Mattison, P. A.....Winona
§Meinert, A. E.....Winona
§Nauth, B. S.....Winona
§Page, R. L.....St. Charles
§†Robbins, C. P.....Winona
§Roemer, H. J.....Winona
§Rogers, C. W.....Winona
§Roth, F. D.....Lewiston
§Satterlee, H. W.....Lewiston
§Schaefer, Samuel .....Winona
§Schmidt, Hilmar.....Wilmar
§Steiner, I. W.....Winona
§†Tweedy, G. J. .....Winona
§Tweedy, J. A. .....Winona
§Vollmer, F. J.....Winona
§Wilson, R. H.....Winona
§Younger, L. I.....Winona

WRIGHT COUNTY MEDICAL SOCIETY

Regular meetings quarterly
Annual meeting, October
Number of Members: 18

President
Ryding, V. T. .....Howard Lake
Secretary
Catlin, T. J. .....Buffalo

§Anderson, W. P.....Buffalo
Bendix, L. H.....Annandale

§Catlin, J. J.....Buffalo
§Catlin, T. J.....Buffalo
§Ellison, F. E.....Monticello
Gomsi, E. S. .....Cokato
§Greenfield, W. T.....Delano
Grundset, O. J.....Montrose
Guilfoile, P. J.....Delano
Harriman, Leonard.....Howard Lake
§Hart, W. E.....Monticello
Peterson, O. L.....Cokato
§Ridgway, A. M.....Annandale
§Roholt, C. L.....Waverly
Ryding, V. T. .....Howard Lake
Swezey, B. F.....Buffalo
§Thielen, R. D.....St. Michael
Thompson, Arthur .....Cokato

Alphabetic Roster

Key to Symbols: *Deceased; †Affiliate, Associate or Life Member; ‡In Service.

Aagaard, G. N., Jr.....Minneapolis
Aanes, A. M.....Red Wing
†Aborn, W. H.....Hawley
Abraham, A. L.....Duluth
Abramson, Milton.....Minneapolis
Ackerman, R. F.....Rochester
Adair, A. F., Jr.....St. Paul
Adams, B. S.....Hibbing
Adams, N. D. .....Rochester
Adams, R. C.....Bird Island
Adams, Richard C.....Rochester
Addy, E. R.....Gilbert
Adkins, C. D.....Minneapolis
Adkins, C. M.....Thief River Falls
Adson, A. W.....Rochester
Affeldt, D. E.....Kasson
Ahern, E. E.....Minneapolis
Ahlfs, J. J.....Caledonia
Ahrens, A. E.....St. Paul
Ahrens, A. H.....St. Paul
†Ahrens, C. F. .....Galveston, Texas
†Aitkins, H. B.....Le Center
Akester, Ward.....Fergus Falls
Akins, W. M.....Red Wing
Albers, D. D. .....Rochester
Albrecht, H. H.....Chisago City
Alden, John F., Jr.....St. Paul
Aldrich, C. A.....Rochester
Alexander, H. A.....Minneapolis
Alger, E. W.....Minneapolis
Aling, C. A.....Minneapolis
Allen, C. S.....Rochester
Allen, E. V. N.....Rochester
*Allen, H. B. .....Austin
Allen, Horace E.....Rochester
Allen, Lewis G. .....Rochester
Altnow, H. O.....Minneapolis
Alvarez, W. C.....Rochester
†Amberg, Samuel .....Rochester
Andersen, H. A.....Rochester
Andersen, S. C.....Minneapolis
Anderson, C. A. .....Hector
Anderson, C. D.....Chicago, Ill.
Anderson, C. L.....Ely
Anderson, D. C. .....Olivia
Anderson, D. D.....Minneapolis
Anderson, D. P., Jr.....Austin
Anderson, E. D.....Minneapolis
Anderson, E. R.....Minneapolis
Anderson, Franklin .....Owatonna
*Anderson, F. J. .....Minneapolis
Anderson, H. R. .....Minneapolis
Anderson, J. J. .....Minneapolis
Anderson, J. K.....Minneapolis
Anderson, J. R.....Rochester
Anderson, K. W.....Minneapolis
Anderson, M. C.....Minneapolis
Anderson, M. E., Jr.....Rochester
Anderson, M. J.....Rochester
Anderson, M. W.....Rochester
Anderson, O. W.....Luverne
Anderson, R. E.....Willmar
Anderson, R. E.....Rochester
Anderson, R. L. .....Rochester
Anderson, S. H.....Red Wing
Anderson, T. P. .....Rochester
Anderson, U. S.....Minneapolis
Anderson, W. P.....Buffalo
Anderson, W. E.....Clearbrook
Anderson, W. T.....Minneapolis
Anderson, W. W. .....Brainerd
Andreassen, E. C.....Minneapolis
Andrejek, A. R.....Madison
Andresen, K. D.....Minneapolis
Andrews, R. N.....Mankato
Andrews, R. S.....Minneapolis
Anthony, W. P. .....Rochester
Arends, A. L.....Moose Lake
Arey, S. L.....Minneapolis
Arko, J. L.....Hibbing
Arlander, C. E.....Minneapolis
Arling, L. S.....Minneapolis
Arling, P. A.....Rochester
Armstrong, E. L.....Duluth
Armstrong, R. S.....Winnebago
Arndt, H. W.....Detroit Lakes
Arneson, A. I.....Morris
Arneson, J. F.....Rochester
Arnold, Anna W.....Minneapolis
Arnold, D. C.....Minneapolis
Arnold, E. W.....Adrian
Arnold, Samuel J. ...Brooklyn, N. Y.
Arnquist, A. S.....St. Paul
Arnson, J. M.....Benson
Arny, F. P.....St. Paul
Arvidson, C. G.....Minneapolis
Arzt, P. K.....St. Paul
Ashe, William M. .....Rochester
Athens, A. G.....Duluth
Atmore, W. G. .....Duluth
Aune, Martin.....Minneapolis
†Aurand, W. H.....Minneapolis
Aurelius, J. R.....St. Paul
Ausman, C. F.....St. Paul
Ausman, D. R. .....St. Paul
Austin, G. W. .....Rochester
Avrick, Alan M.....Onamia

Babb, F. S.....St. Paul
Bachnik, F. W.....Hibbing
Backus, R. W.....Nopeming
Bacon, D. K.....St. Paul
†Bacon, L. C.....St. Paul
Bagby, G. W.....Cannon Falls
Badeaux, G. I.....Brainerd
Baggenstoss, A. H.....Rochester
Bagley, C. M.....Duluth
Bagley, Elizabeth C.....Duluth
Bagley, W. R.....Duluth
Baich, V. M.....Bovey
Bailey, Allen A.....Rochester
Bailey, J. H.....Rochester
Bailey, R. B.....Fairmont
Bair, H. L.....Rochester
Baird, J. W.....Minneapolis
Baken, M. P.....Minneapolis
Baker, A. B.....Minneapolis
Baker, A. C.....Fergus Falls
Baker, A. T.....Minneapolis
Baker, E. L.....Minneapolis
Baker, G. S.....Rochester
Baker, H. R.....Hayfield
Baker, Jeannette L.....Fergus Falls
†Baker, Looe.....Minneapolis
Baker, N. H.....Fergus Falls
Baker, R. L.....Hayfield
Bakkila, H. E.....Duluth
Balcome, M. M.....St. Paul
Balfour, D. C.....Rochester
Balfour, D. C., Jr.....Rochester
Balfour, W. M.....Rochester
Balkin, S. G.....Minneapolis
Ball, Warren P. .....Rochester
Balmer, A. I.....Pipestone
Bank, E. W. .....Minneapolis
Bank, H. E.....Portland, Oregon
Banner, Edw. A.....Rochester
†Barber, J. P. .....Minneapolis
Barber, T. E.....Austin
Bardon, Richard.....Duluth
Bargen, J. A.....Rochester
Barger, J. D.....Rochester
Barker, J. D.....Duluth
Barker, N. W.....Rochester
Barnes, A. R.....Rochester
Barnes, B. C.....Rochester
Barnett, G. L. .....Graceville
Barnett, J. M.....St. Paul
Barney, L. A.....Duluth
Barr, L. C.....Albert Lea
Barr, M. M.....Rochester
Barr, R. N.....St. Paul
Barr, W. H.....Wells
Baronofsky, I. D. .....Minneapolis
Barrett, E. E.....Duluth
Barron, Moses.....Minneapolis
Barry, L. W.....St. Paul
Barsness, Nellie O. N.....St. Paul
Barton, John C. .....Bethesda, Md.
Basinger, H. P.....Windom
Basinger, H. R.....Mountain Lake
Baskin, Roy H. .....Rochester
Batdorf, B. N.....Good Thunder
Bateman, J. G.....Rochester
Bateman, O. A. L.....Rochester
Bauer, E. L. ....St. Paul
Baumgartner, F. H.....Albany
†Baxter, S. H. .....Minneapolis
*Bayard, H. F. .....Minneapolis
Bayley, E. C.....Lake City
Bayrd, E. D.....Rochester
Beach, Northrup.....Minneapolis
Beahrs, O. H.....Rochester
†Beals, Hugh.....St. Paul
†Beard, A. H.....Minneapolis
‡Bearzy, H. J.....Rochester
Bechtel, M. J.....Warren
Beck, W. W., Jr. .....Rochester
Becker, F. T.....Duluth
Beckering, Gerrit.....Edgerton
†Beckman, W. G., Palo Alto, California
Bedford, E. W.....Minneapolis
Beech, R. H.....St. Paul
Beek, H. O.....St. Paul
Beeler, J. W.....Rochester
Beer, J. J.....St. Paul
Begley, J. W. .....Rochester
Behmler, F. W.....Morris
Behr, O. K.....Crookston
Beise, R. A.....Brainerd
Beiswanger, R. H.....Minneapolis
Bell, C. C.....St. Paul
†Bell, E. T.....Minneapolis
Bellegie, N. J. .....Rochester
Bellville, T. P.....Minneapolis
Belote, G. B.....Caledonia
Belzer, M. S.....Minneapolis
Bender, J. H.....Brainerd
Bendix, L. H.....Annandale
Benedict, W. L.....Rochester
Benepe, J. L.....St. Paul
Benesh, L. A.....Minneapolis
Benjamin, A. E.....Minneapolis
Benjamin, E. G.....Minneapolis
Benjamin, H. G.....Minneapolis
Benjamin, W. G.....Pipestone
†Benn, F. G. .....Minneapolis
Bennett, Henry S. .....Rochester
Bennett, W. A.....Rochester
†Bennion, P. H. .....Isway, Mont.
Benoit, F. T.....Winona
Benson, L. M. .....Tracy
Bentley, N. P.....St. Paul
Benton, Deane W. .....Worthington
Benton, P. C. .....St. Paul
Bentson, J. A.....Rochester
Bepko, Marie K.....Cloquet
Berdez, G. L.....Duluth
Bergan, Otto.....Clinton
Bergan, R. O.....Duluth
Berge, D. O.....Roseau
Berge, H. L. .....Mora
Berger, A. G.....Minneapolis
Bergh, G. S.....Minneapolis
*Bergh, L. N. .....Montevideo
Bergh, Solveig, M.....Minneapolis
Berghs, L. V.....Owatonna
Bergman, O. B.....St. James
Bergquist, K. E.....Battle Lake
Berkman, D. M.....Rochester
Berkman, J. M.....Rochester
Berkwitz, N. J.....Minneapolis
Berlin, A. S.....Hallock
§Berman, Reuben .....Minneapolis
Bernatz, P. E. .....Rochester
Bernstein, W. C.....St. Paul
†Bertelson, Oskar L.....Crookston
Bessesen, A. N., Jr.....Minneapolis
Bessessen, D. H.....Minneapolis
Bessessen, W. A.....Minneapolis
Beuning, J. B.....St. Cloud
Beyer, E. F. .....Braham
Bianco, A. J.....Duluth
Bicek, J. F.....St. Paul
Bickel, W. H.....Rochester
Biedermann, Jacob..Thief River Falls
Bieter, R. N.....Minneapolis
Bigelow, C. E.....Dodge Center
Bigler, Earl E. .....Perham
Bigler, I. E.....Perham
Bilka, P. J.....Rochester
Billings, R. E.....Franklin
†Binet, H. E.....Grand Rapids
Binger, H. E.....St. Paul
Biorn, C. L.....Rochester
Black, B. M.....Rochester
Black, E. J.....St. Paul
Black, W. A.....New Ulm
Blackburn, C. M. .....Rochester
Blackmore, S. C. .....Biwabik
Blake, A. J. .....Hopkins
†Blake, James .....Hopkins
Blake, James A.....Hopkins
†Blake, P. S.....Minneapolis
Block, Melvin A. .....Rochester
Bloedel, T. J. G. .....Osseo
Bloemendaal, E. J. G.....Lake Park
Blomberg, W. R.....Princeton
Blumenthal, J. S.....Minneapolis
Blunt, C. P., III.....Rochester

Boardman, D. V.....Winona
Bock, R. A.....St. Paul
Bockman, M. W. H.....Minneapolis
Bodaski, A. A.....Le Center
Boeckmann, Egil.....St. Paul
Boehrer, J. J., Jr.....Minneapolis
Bofenkamp, F. W.....Luverne
Boies, L. R.....Minneapolis
Boisclair, T. G.....Detroit Lakes
Bolender, H. L.....St. Paul
Boleyn, E. S.....Stillwater
Bolger, James V.....Rochester
Bolne, C. A.....Battle Lake
†Bolsta, Charles.....Ortonville
Bolz, J. A.....Grand Rapids
Boman, P. G.....Duluth
Boody, G. J., Jr.....Dawson
†Booth, A. E.....Minneapolis
Boothby, W. M.....Rochester
Boreen, C. A.....Minneapolis
Booren, J. C.....Duluth
Borden, C. W.....Minneapolis
Borg, J. F.....St. Paul
Borgerson, A. H.....Long Prairie
Borgeson, E. J.....Minneapolis
Borman, C. N.....Minneapolis
†Borowitz, L. A.....New York, N. Y.
Bosland, H. G.....Willmar
Bossert, C. S.....Mora
Bottolfson, B. T.....Moorhead
Boucek, R. J.....Rochester
Bouma, L. R.....St. Paul
Bouquet, B. J.....Wabasha
Bourget, G. E.....Detroit Lakes
Bowen, R. L.....Hibbing
Bowers, G. G.....Minneapolis
Bowers, R. N.....Lake City
Bowing, H. H.....Rochester
Boyer, S. H.....Duluth
Boyer, S. H., Jr.....Duluth
Boylan, R. N.....Rochester
Boynton, Bruce.....Ada
Boynton, Ruth E.....Minneapolis
Boysen, Herbert.....Madelia
†Boysen, Peter.....Austin, Texas
Braasch, W. F.....Rochester
Braceland, F. J.....Rochester
Brand, G. D.....St. Paul
Brand, W. A.....Redwood Falls
Brandenburg, R. O.....Rochester
Brandes, R. W.....Rochester
Branton, B. J.....Willmar
Bratholdt, J. W.....Watertown
Bratrud, A. F.....Minneapolis
Bratrude, E. J.....St. James
Braun, O. C.....Nashwauk
Bray, E. R.....St. Paul
Bray, K. E.....Evansville, Ind.
Bray, P. N.....Duluth
Bray, R. B.....Biwabik
Bregel, F. L.....St. James
Brekke, H. J.....Minneapolis
Brickley, Paul M.....Rochester
Briggs, J. F.....St. Paul
Brigham, C. F.....St. Cloud
Brigham, C. F., Jr.....St. Cloud
Brilhart, K. B.....Rochester
Brill, Alice K.....Minneapolis
Brink, A. A.....Baudette
Brink, D. M.....Hutchinson
Broadie, T. E.....St. Paul
Broders, A. C.....Rochester
Brodie, W. D.....St. Paul
Broker, H. M.....Eden Valley
Brooker, W. J.....Duluth
Brooks, C. N.....Minneapolis
Brooks, L. M.....Rochester
Brooksby, W. A.....Rochester
Brotchner, R. J.....St. Paul
Brown, A. E.....Rochester
†Brown, A. H.....Pipestone
†Brown, E. D.....Paynesville
Brown, H. A.....Rochester
Brown, H. S.....Rochester
Brown, J. C.....St. Paul
Brown, J. R.....Minneapolis
Brown, L. L.....Crookston
Brown, P. W.....Rochester
†Brown, S. P.....Minneapolis
Brown, W. D.....Minneapolis
Browning, W. H.....Rochester
Brunsting, L. A.....Rochester
Brusegaard, J. F.....Red Wing
Brutsch, G. C.....Minneapolis
Bryan, A. L.....San Diego, Calif.
Buchstein, H. F.....Minneapolis
Buck, F. H.....Shakopee
Buckley, R. P.....Duluth
Buffmire, D. J.....Rochester
Buie, Louis A.....Rochester
Buirge, R. E.....Minneapolis
Bulinski, T. J.....St. Paul
Bulkley, Kenneth.....Minneapolis
Bunker, B. W.....Anoka
Burch, E. P. II.....St. Paul
†Burch, F. E.....St. Paul
Burchell, H. B.....Rochester
Buresh, K. L.....LeRoy
Burgess, H. M.....Rochester
Burke, E. C.....Rochester
Burkland, E. C.....St. Paul
Burleigh, J. S.....Luverne
Burlingame, D. A.....St. Paul
Burmeister, R. O.....Welcome
Burnap, W. L.....Fergus Falls
Burnham, W. H.....Minneapolis
Burns, F. M.....Milan
Burns, H. A.....Anoka
Burns, M. A.....Milan
Burns, R. M.....St. Paul
Burseth, E. C.....Forest Lake
Burton, C. G.....St. Paul
Busard, J. M.....Rochester
Buscher, J. C.....St. Cloud
Bush, R. P.....Rochester
Bushard, W. J.....Minneapolis
Busher, H. H.....St. Paul
Butler, D. B.....Rochester
Butler, J. K.....Carlton
Butt, H. R.....Rochester
Butturff, C. R.....Freeborn
Butzer, J. A.....Mankato
Buzzelle, L. K.....Minneapolis

Cable, M. L.....Minneapolis
Cabot, C. M.....Minneapolis
Cabot, V. S.....Minneapolis
Cady, L. H.....Minneapolis
Cain, C. L.....St. Paul
Cain, J. C.....Rochester
Cain, J. H.....Hoffman
Cairns, R. J.....Redwood Falls
Calhoun, F. W.....Albert Lea
Callahan, F. F.....St. Paul
Callerstrom, G. W.....Minneapolis
Cameron, Isabell L.....Minneapolis
Cameron, J. H.....Crookston
Cameron, J. M.....Rochester
Camp, J. D.....Rochester
Camp, W. E.....Minneapolis
Campbell, D. C.....Rochester
Campbell, L. M.....Minneapolis
Campbell, O. J.....Minneapolis
Canfield, Albert.....Thief River Falls
Canfield, W. W.....Winona
Cannon, B. W.....Rochester
Cantwell, W. F.....International Falls
Caplan, Leslie.....Minneapolis
Cardle, A. E.....Minneapolis
Cardle, G. E.....Brainerd
Carey, J. B.....Minneapolis
Carlander, L. W., Jr.,.....Rochester
Carley, W. A.....St. Paul
Carlson, A. E.....Warren
Carlson, C. E.....Alexandria
Carlson, J. V.....Westbrook
Carlson, Lawrence.....Minneapolis
Carlson, L. T.....Minneapolis
Carlson, R. E.....Stillwater
Carman, J. E.....Detroit Lakes
Caron, R. P.....Minneapolis
Carpenter, G. T.....Rochester
Carpenter, R. E.....Duluth
Carr, D. T.....Rochester
Carroll, T. T.....Rochester
Carroll, W. C.....St. Paul
Carryer, H. M.....Rochester
Carter, H. G.....Minneapolis
Carter, J. W., Jr.....Rochester
Cashin, J. C.....Rochester
Caspers, C. G.....Minneapolis
Catlin, J. J.....Buffalo
Catlin, T. J.....Buffalo
Cavanor, F. T.....Minneapolis
Ceder, E. T.....Minneapolis
Ceplecha, S. F.....Redwood Falls
Cervenka, C. F.....New Prague
Chadbourn, C. R.....St. Paul
Challman, S. A.....Minneapolis
Chambers, W. C.....Blue Earth
Chance, D. P.....Rochester
Chapman, C. B.....Minneapolis
Chapman, C. E.....Rochester
Chapman, T. L.....Duluth
Chatterton, C. C.....St. Paul
Chermak, F. G.....International Falls
Chesley, A. J.....Minneapolis
Childs, D. S., Jr.....Rochester
Chisholm, T. C.....Minneapolis
Christensen, C. H.....Duluth
Christensen, E. E.....Winona
Christensen, N. A.....Rochester
Christenson, G. R.....Minneapolis
Christiansen, Andrew.....St. Paul
Christiansen, H. A.....Jackson
Christianson, H. W.....Minneapolis
Christoferson, Lee A.....Rochester
Chunn, S. S.....Pipestone
Clagett, O. T.....Rochester
Clark, H. B.....St. Cloud
Clark, H. B., Jr.....St. Paul
Clark, I. T.....Duluth
Clark, L. W.....Spring Valley
Clarke, E. K.....Minneapolis
Clay, L. B.....Minneapolis
Claydon, H. F.....Red Wing
*Claydon, L. E.....Red Wing
Cleaves, W. D.....Sauk Centre
Clifford, G. W.....Alexandria
Clifton, T. A.....Chatfield
Closuit, F. C.....Aitkin
Clothier, E. F.....Elk River
Cochrane, B. B.....St. Paul
Cochrane, R. F.....Minneapolis
Coddon, W. D.....St. Paul
Cohen, B. A.....Minneapolis
Cohen, S. S.....Minneapolis
Colby, W. L.....St. Paul
Cole, J. P.....Rochester
Cole, W. H.....St. Paul
Coll, J. J.....Duluth
Collet, R. W.....Rochester
†Collie, H. G.....St. Paul
†Collins, A. N.....Moose Lake
†Collins, H. C.....Duluth
Collins, J. S.....Wabasha
Combacker, L. C.....Fergus Falls
Combs, R. G.....Rochester
Comfort, M. W.....Rochester
Condit, W. H.....Minneapolis
Connolly, C. J.....St. Paul
Connor, C. E.....St. Paul
Conway, J. E.....St. Cloud
Cook, C. K.....St. Paul
Cook, E. N.....Rochester
Cook, J. M.....Staples
Coombs, C. H.....Cass Lake
Cooper, C. C.....St. Paul
Cooper, J. P.....Excelsior
Cooper, M. D.....Winnebago
Cooper, Talbert.....Rochester
Corbett, J. F.....Minneapolis
Corbin, K. B.....Rochester
Corcoran, C. E., Jr.....Rochester
Corniea, A. D.....Minneapolis
Correa, D. H.....Minneapolis
†Corrigan, J. E.....Spooner
Cosgriff, J. A.....Olivia
Coulter, H. E.....Madelia
Counseller, V. S.....Rochester
Countryman, R. S.....St. Paul
Covell, W. W.....St. Peter
Coventry, M. B.....Rochester
Coventry, W. A.....Duluth
Coventry, W. D.....Duluth
Covey, K. W.....Mahnomen
Cowan, D. W.....Minneapolis
Cowan, G. M.....Minneapolis
†Cowern, E. W.....No. St. Paul
Craig, D. M.....St. Paul
Craig, W. McK.....Rochester
Cranmer, R. R.....Minneapolis
Cranston, R. W.....Minneapolis
Creevy, C. D.....Minneapolis
Crehan, E. L.....Rochester
Creighton, R. H.....Minneapolis
Crenshaw, J. L.....Rochester
Critchfield, L. R.....St. Paul
Crombie, F. J.....No. St. Paul
Cronwell, B. J.....Austin
Crow, E. R.....Ah-Gwah-Ching
Crowley, D. F., Jr.....Rochester
Crowley, J. H.....St. Paul
Crump, J. W.....St. Paul
Crumpacker, E. L.....Rochester
Culligan, J. M.....St. Paul
Culligan, L. C.....Minneapolis
Culmer, C. U.....Minneapolis
Culver, L. G.....St. Paul
Cumming, H. A.....Phoenix, Ariz.
Curtis, R. A.....Le Center
Curtiss, R. K.....Rochester
Cutts, George.....Minneapolis

Dack, L. G.....St. Paul
Dady, E. E.....Minneapolis
Daehlin, Rolf.....Fergus Falls
Dahl, E. O.....Minneapolis
†Dahl, G. A.....Mankato
Dahl, J. A.....Minneapolis
Dahlin, D. C.....Rochester
Dahlin, I. T.....Aurora
Dahlstet, J. P.....No. Mankato
†Daignault, O.....Benson
Dale, L. N.....Red Lake Falls
Danford, K. A.....Mahnomen
Daniel, D. H.....Minneapolis
Daniels, B. T.....Rochester
Danielson, K. A.....Litchfield
Danielson, Lennox.....Litchfield
Dargay, C. P.....Minneapolis
†Daugherty, E. B.....Marine-on-St. Croix
Daugherty, G. W.....Rochester
Davis, A. C.....Rochester

Davis, E. V. ..... St. Paul
Davis, I. G. ..... Rushford
Davis, J. C. ..... Minneapolis
Davis, L. T. ..... Wadena
Davis, L. F. ..... Wadena
Davis, R. M. ..... Rochester
Davis, Robert E. ..... Rochester
Davis, R. D. ..... Waseca
Davis, T. C. ..... Wadena
Davis, T. L. ..... Wadena
Davis, W. I. ..... Mound
Day, Lois A. ..... Rochester
Dearing, W. H., Jr. ..... Rochester
DeBoer, Hermanus ..... Edgerton
Decker, C. H. ..... St. Paul
Decker, D. G. ..... Rochester
Dederick, G. F., Jr. ..... Rochester
Dedolph, Karl ..... St. Paul
†Dedolph, T. H. ..... Minneapolis
DeForest, R. E. ..... Rochester
Delmore, J. L. ..... Roseau
Delmore, J. L., Jr. ..... Roseau
Delmore, R. J. ..... Roseau
del Plaine, C. W. ..... Minneapolis
Demo, R. A. ..... Albert Lea
Denman, A. V. ..... Mankato
Dennis, Clarence ..... Minneapolis
Derauf, B. I. ..... St. Paul
Desjardins, A. U. ..... Rochester
Deters, D. C. ..... St. Paul
Devereaux, T. J. ..... Wayzata
Devine, K. D. ..... Rochester
Devney, J. W. ..... Rochester
DeWeerd, J. H., Jr. ..... Rochester
Deweese, W. J. ..... Bemidji
Dewey, D. H. ..... Owatonna
Dickson, F. H., Jr. ..... Proctor
Dickson, T. H. ..... St. Paul
Diehl, H. S. ..... Minneapolis
Diessner, G. R. ..... Rochester
Diessner, H. D. ..... Minneapolis
Dille, D. E. ..... Litchfield
Dittrich, R. J. ..... Duluth
Dixon, C. F. ..... Rochester
Dockerty, M. B. ..... Rochester
Dodds, Wm. C. ..... Detroit Lakes
Dodge, Mark ..... Rochester
Doherty, E. M. ..... New Prague
Dolder, F. C. ..... Eyota
Doman, V. W. ..... Lakefield
Doms, H. C. A. ..... Slayton
Doms, Vernon A. ..... Slayton
Donahoe, J. W. ..... Rochester
Donaldson, C. S. ..... Foley
Donoghue, F. E. ..... Rochester
Donohue, P. F. ..... St. Paul
Donovan, D. L. ..... Albert Lea
*Doolittle, L. E. ..... Duluth
Dordal, J. ..... Sacred Heart
Dorge, R. I. ..... Minneapolis
Dornberger, G. R. ..... Rochester
Dornblaser, H. B. ..... Minneapolis
Dorsey, G. C. ..... Minneapolis
Douglas, J. M. ..... Rochester
Douglass, B. E. ..... Rochester
Dovre, C. M. ..... St. Paul
Dowidat, R. W. ..... Minneapolis
Doxey, G. L. ..... Minneapolis
Doyle, G. C. ..... Duluth
Doyle, L. O. ..... Minneapolis
Drake, C. B. ..... St. Paul
Drake, C. R. ..... Minneapolis
†Drake, F. A. ..... Lanesboro
Dredge, H. P. ..... Sandstone
Dredge, T. E. ..... Minneapolis
Drescher, E. P. ..... Rochester
Drexler, G. W. ..... Blue Earth
Drill, H. E. ..... Hopkins
Drips, Della G. ..... Rochester
†Drought, W. W. ..... Fergus Falls
Drumheller, J. F. ..... Rochester
Dry, T. J. ..... Rochester
Dubbe, F. H. ..... New Ulm
DuBois, J. F. ..... Sauk Centre
Duff, E. R. ..... Minneapolis
Dukelow, D. A. ..... Glen Ellyn, Ill.
†Dumas, A. G. ..... Minneapolis
Duncan, D. K. ..... Rochester
Duncan, J. W. ..... Moorhead
Dunlap, E. H. ..... Minneapolis
Dunn, G. R. ..... Minneapolis
Dunn, J. N. ..... St. Paul
DuPont, J. A. ..... Excelsior
Duryea, W. M. ..... Minneapolis
Du Shane, J. W. ..... Rochester
†Dutton, C. E. ..... Minneapolis
Dvorak, B. A. ..... Minneapolis
Dwan, P. F. ..... Minneapolis
Dwinnell, L. A. ..... Fergus Falls
Dworetzky, M. ..... Rochester
Dworsky, S. D. ..... Minneapolis
Dysterheft, A. F. ..... Gaylord

Earl, G. A. ..... St. Paul
Earl, J. R. ..... St. Paul
*Earl, Robert ..... St. Paul
Earnest, Franklin, III ..... Rochester
Eaton, L. M. ..... Rochester
Eberley, T. S. ..... Benson
†Eberlin, E. A. ..... Glenwood
Ebert, R. V. ..... Minneapolis
Eby, Lee G. ..... Rochester
Eckdale, J. E. ..... Marshall
Eckles, N. ..... Minneapolis
Eckman, P. F. ..... Duluth
Eckman, R. J. ..... Duluth
Eckstam, E. E. ..... Rochester
Edlund, Gustaf ..... St. Paul
Edwards, Jessie E. ..... Rochester
Edwards, J. W. ..... St. Paul
Edwards, L. G. ..... St. Paul
†Edwards, R. T. ..... Columbus, Ohio
Edwards, T. J. ..... St. Paul
Egge, Sanford G. ..... Albert Lea
Egmton, C. T. ..... St. Paul
Ehrenberg, C. J. ..... Minneapolis
Ehrlich, S. P. ..... Minneapolis
Eich, Matthew ..... Minneapolis
Eiler, John ..... Park Rapids
Eisenman, Walter ..... Coleraine
Eisenstadt, D. H. ..... Minneapolis
Eisenstadt, W. S. ..... Minneapolis
Eitel, G. D. ..... Minneapolis
Ekblad, J. W. ..... Duluth
Ekstrand, L. M. ..... Wabasha
Elias, F. J. ..... Duluth
Elkins, E. C. ..... Rochester
Ellingson, A. R. ..... Detroit Lakes
Elliott, J. A., Jr. ..... Rochester
Ellis, E. W. ..... Elgin
Ellis, Eugene J. ..... Rochester
Ellis, F. H. ..... Rochester
Ellison, D. E. ..... Minneapolis
Ellison, F. E. ..... Monticello
Elsey, E. M. ..... Glenwood
†Elsey, J. R. ..... Glenwood
Ely, O. S. ..... So. St. Paul
Emanuel, K. W. ..... Duluth
Emerson, E. C. ..... St. Paul
Emerson, E. E. ..... Osakis
Emmett, J. L. ..... Rochester
Endress, E. K. ..... St. Paul
Engberg, E. J. ..... Faribault
Engel, J. P. ..... Rochester
Engels, E. P. ..... Rochester
Engelhart, P. C. ..... Minneapolis
†Englund, E. F. ..... Minneapolis
Engstrand, O. J. ..... Minneapolis
Engstrom, G. F. ..... Belgrade
Enroth, O. E. ..... St. Paul
Eppard, R. M. ..... Cloquet
Epperson, D. P. ..... Rochester
Erb, H. R. ..... Rochester
Erdal, Ove A. ..... Albert Lea
Erich, J. B. ..... Rochester
Erickson, A. O. ..... Long Prairie
Erickson, C. O. ..... Minneapolis
Erickson, D. J. ..... Rochester
Erickson, Eskil ..... Halstad
Erickson, R. F. ..... Minneapolis
Ericson, R. M. ..... Minneapolis
Ericson, Swan ..... Le Sueur
Ernest, G. C. H. ..... So. St. Paul
Ersfeld, M. P. ..... St. Paul
Erskine, G. M. ..... Grand Rapids
Ertel, E. Q. ..... Ellendale
†Eshelby, E. C. ..... St. Paul
Esser, John ..... Perham
Esser, O. J. ..... New Ulm
Estes, J. E. ..... Rochester
Estrem, C. O. ..... Fergus Falls
Estrem, R. L. ..... Fergus Falls
Estrem, T. A. ..... Hibbing
Eusterman, G. B. ..... Rochester
Evans, E. T. ..... Minneapolis
Evans, L. M. ..... Sauk Rapids
Evans, R. D. ..... Minneapolis
†Evarts, A. B. ..... Rochester
Evert, J. A. ..... St. Paul
Ewens, H. B. ..... Virginia
Eyster, W. H., Jr. ..... Rochester

Faber, J. E. ..... Rochester
†Fahey, E. W. ..... St. Paul
Fahey, M. M. ..... Rochester
Fahr, G. E. ..... Minneapolis
Fait, R. V. ..... Little Falls
Falsetti, F. P. ..... Rochester
Fansler, W. A. ..... Minneapolis
Farkas, J. V. ..... St. Paul
†Farrish, R. C. ..... Sherburn
†Farsht, I. J. ..... Los Angeles, Calif.
Faulconer, Albert, Jr. ..... Rochester
Faulkner, J. W. ..... Rochester
Fawcett, A. M. ..... Renville
Fawcett, K. R. ..... Duluth
Fazio, A. N. ..... Rochester
Feeney, J. M. ..... Minneapolis
Feigal, W. M. ..... Thief River Falls
Feldman, F. M. ..... Washington, D. C.
Feinstein, J. Y. ..... Minneapolis
Felion, A. J. ..... St. Paul
Fellows, M. F. ..... Duluth
Fenger, E. P. K. ..... Oak Terrace
Ferguson, J. C. ..... St. Paul
Ferguson, W. C. ..... Walnut Grove
Ferrell, C. R. ..... Grand Rapids
Ferris, D. O. ..... Rochester
Ferris, H. A., Jr. ..... Rochester
Fensenmaier, O. B. ..... New Ulm
Fessler, H. H. ..... St. Paul
Figi, F. A. ..... Rochester
Fine, B. A. ..... Crosby
Fingerman, D. L. ..... Minneapolis
Fink, D. L. ..... St. Paul
Fink, L. W. ..... Minneapolis
Fink, W. H. ..... Minneapolis
Fisch, H. M. ..... Austin
Fischer, M. McC. ..... Duluth
Fisher, C. E. ..... Rochester
Fisher, Dan W. ..... St. Paul
Fisher, I. I. ..... Minneapolis
Fisher, J. M. ..... Willmar
Fisher, R. G. ..... Rochester
Fisketti, Henry ..... Duluth
†Fitzgerald, D. F. ..... Minneapolis
†Fitzgerald, E. T. ..... Morris
Fitzsimons, W. E. ..... Brainerd
Fjeldstad, C. A. ..... Minneapolis
Flanagan, H. F. ..... St. Paul
Flanagan, L. G. ..... Austin
Flannery, Hubert F. ..... St. Paul
Flautt, J. R., Jr. ..... Rochester
Fleeson, W. H. ..... Minneapolis
†Fleming, A. S. ..... Minneapolis
Fleming, D. S. ..... Minneapolis
Fleming, T. N. ..... St. Cloud
Flesche, B. A. ..... Lake City
Flink, E. B. ..... St. Paul
Flinn, T. E. ..... Remer
Flom, M. G. ..... Zumbrota
Flom, R. P. ..... St. Paul
Flynn, B. F. ..... Hibbing
†Fogarty, C. W. ..... St. Paul
Fogarty, C. W., Jr. ..... St. Paul
Fogelberg, E. J. ..... St. Paul
Foker, L. W. ..... Minneapolis
Foley, F. E. B. ..... St. Paul
Folken, F. G. ..... Albert Lea
Folsom, L. B. ..... Minneapolis
Ford, B. C. ..... Marshall
Ford, John L. ..... Rochester
Ford, W. H. ..... Minneapolis
Forsythe, J. R. ..... St. Paul
Forsythe, R. W. ..... Rochester
Fortier, G. M. A. ..... Little Falls
Fortier, Rene G. ..... Marble
Foss, E. L. ..... Rochester
Foster, Orley W. ..... Minneapolis
Foster, W. K. ..... Minneapolis
Foulk, W. T. ..... Rochester
Fowler, L. H. ..... Minneapolis
Fox, James R. ..... Minneapolis
Franchere, F. W. ..... Lake Crystal
Francis, D. W. ..... Morristown
Frane, D. B. ..... Minneapolis
Frank, J. E. ..... Salt Lake City, Utah
Frank, L. M. ..... Rochester
Frear, Rosemary R. ..... Minneapolis
Fredericks, G. M. ..... Minneapolis
Frederickson, Alice C. ..... Willmar
Frederickson, G. U. Y. ..... Willmar
Fredlund, M. L. ..... Minneapolis
Fredricks, M. G. ..... Duluth
†Freeman, C. D. ..... Balsam Lake, Wis.
Freeman, C. D., Jr. ..... St. Paul
Freeman, J. G. ..... Rochester
†Freeman, J. P. ..... Glenville
Freidman, L. L. ..... St. Paul
Freligh, W. P. ..... Albert Lea
French, L. A. ..... Minneapolis
Fricke, R. E. ..... Rochester
Fricke, R. W. ..... Rochester
Fried, L. A. ..... Minneapolis
Friedell, Aaron ..... Minneapolis
Friedell, George ..... Ivanhoe
Friesleben, William ..... Sauk Rapids
Frisch, F. P. ..... Willmar
Fritsche, Albert ..... New Ulm
Fritsche, C. J. ..... New Ulm
Fritsche, T. R. ..... New Ulm
Fritz, W. L. ..... St. Paul
Froats, C. W. ..... St. Paul
†Frost, E. H. ..... Willmar
Frost, J. B. ..... Minneapolis
Frost, R. H. ..... St. Paul
Frykman, H. M. ..... Minneapolis
Fugina, G. R. ..... Mankato
Fuller, Alice H. ..... Minneapolis
Fuller, B. F. ..... Rochester
Fuller, Josiah ..... Rochester
Funk, V. K. ..... Oak Terrace

Gaarde, F. W., Jr. ..... Rochester

Gaida, J. B. ..... St. Cloud
Gaines, E. C. ..... Buffalo Lake
Gallagher, B. J. ..... Waseca
Galligan, Margaret M. D. .. Minneapolis
Galloway, J. B. ..... Minneapolis
†Gambill, C. M. ..... Rochester
Gambill, E. E. ..... Rochester
Gammell, J. H. ..... Minneapolis
Garbrecht, A. W. ..... St. Paul
Gardiner, D. G. ..... St. Paul
Gardner, V. H. ..... Fairmont
Gardner, W. P. ..... St. Paul
Garlock, D. H. ..... Bemidji
Garrow, D. M. ..... St. Paul
Garten, J. L. ..... Minneapolis
Gastineau, C. F. ..... Rochester
Gates, Edward M. ..... Detroit, Mich.
Gaviser, David ..... Minneapolis
Gay, J. R. ..... Rochester
Geer, E. K. ..... St. Paul
Gehlen, J. N. ..... St. Paul
Geist, G. A. ..... St. Paul
Geraci, J. E. ..... Rochester
Gerber, M. P. ..... Brainerd
Gericke, J. T., Jr. ..... Glenwood
Gersten, J. W. ..... Rochester
Ghent, C. H. ..... St. Paul
Ghormley, R. K. ..... Rochester
Ghostley, Mary C. ..... Puposky
Gibbons, F. C. ..... Comfrey
Gibbs, E. C. ..... St. Paul
Gibbs, R. W. ..... Minneapolis
Gibson, D. P. ..... St. Paul
Giebenhain, J. N. ..... Minneapolis
Giere, J. C. ..... Minneapolis
Giere, R. W. ..... Minneapolis
Giere, S. W. ..... Benson
Giesen, A. F. ..... Starbuck
†Giessler, P. W. ..... Minneapolis
Giffin, H. Z. ..... Rochester
Giffin, Mary E. ..... Rochester
Gilbert, M. G. ..... Minneapolis
†Gilfillan, J. S. ..... St. Paul
Gilkey, S. E. ..... St. Paul
Gillespie, D. R. ..... St. Paul
Gillespie, M. G. ..... Duluth
Gilman, L. C. ..... Willmar
†Gilmore, Rowland ..... Bemidji
Gingold, B. A. ..... Minneapolis
Giroux, A. A. ..... No. Mankato
Girvin, R. B. ..... Minneapolis
Gjerde, W. P. ..... Lake City
Glabe, R. A. ..... Plainview
Glaeser, J. H. ..... Gibbon
Gleason, W. A. ..... St. Paul
Glenn, W. V. ..... Rochester
Goblirsch, A. P. ..... Sleepy Eye
Goehrs, G. H. ..... St. Cloud
Goehrs, H. W. ..... St. Cloud
Gagela, L. J. ..... Rochester
Goldberg, I. M. ..... Minneapolis
Golden, P. B. ..... Rochester
Goldish, D. R. ..... Duluth
Goldman, T. I. ..... Minneapolis
Goldner, M. Z. ..... Minneapolis
Goldsmith, J. W. ..... St. Paul
Goltz, E. V. ..... St. Paul
Goltz, Neil F. ..... St. Paul
Gomsi, E. S. ..... Cokato
Gooch, J. O. ..... Rochester
Good, C. A., Jr. ..... Rochester
Good, H. D. ..... Minneapolis
Goodman, C. E. ..... Virginia
Gordon, P. E. ..... Minneapolis
Goss, H. C. ..... Glencoe
Goss, Martha D. ..... Glencoe
Gowan, L. R. ..... Duluth
Grahek, J. P. ..... Ely
Gramse, A. E. ..... Rochester
Grant, H. W. ..... St. Paul
Grant, J. C. ..... Sauk Center
Gratzek, F. R. E. ..... Minneapolis
Gratzek, Thomas ..... St. Paul
Grau, R. K. ..... St. Paul
Grave, Floyd ..... Minneapolis
Graves, R. B. ..... Red Wing
Graves, W. N. ..... Duluth
Gray, C. P. ..... Rochester
Gray, H. K. ..... Rochester
Gray, R. C. ..... Minneapolis
Greene, L. F. ..... Rochester
Greenfield, W. T. ..... Delano
Gridley, J. W. ..... Glencoe
Griffin, R. P. ..... Benson
Griffith, E. R. ..... Rochester
Grimes, B. P. ..... St. Peter
Grimes, Marian ..... Minneapolis
Grindlay, J. H. ..... Rochester
Grinley, A. V. ..... Grand Rapids
Grise, W. B. ..... Austin
Grogan, J. M. ..... Ceylon
Gronvall, P. R. ..... Minneapolis
Groom, J. J. ..... Rochester
Groschupf, T. P. ..... Bemidji
Grose, F. N. ..... Clarissa

Gross, J. B. ..... Rochester
Grotting, J. K. ..... Rochester
Grugenhagen, A. P. ..... St. Paul
Grundset, O. J. ..... Montrose
Guernsey, D. E. ..... Rochester
Guilbert, G. D. ..... Wood, Wis.
Guilfoile, P. J. ..... Delano
†Gullixson, A. ..... Albert Lea
Gully, R. J. ..... Cambridge
Gushurst, E. G. ..... Minneapolis
Gustason, H. T. ..... Minneapolis

Haavik, J. E. ..... Duluth
Habein, H. C. ..... Rochester
Haberer, Helen R. ..... Minneapolis
Haberle, C. A. ..... Thief River Falls
Haberman, Emil ..... Osakis
Haes, J. E. ..... Mankato
Hagedorn, A. B. ..... Rochester
Hagen, O. J. ..... Moorhead
Hagen, P. S. ..... Minneapolis
Hagen, W. S. ..... Minneapolis
†Haggard, G. D. ..... Minneapolis
Haight, G. G. ..... Audubon
†Haines, J. H. ..... Stillwater
Haines, S. F. ..... Rochester
Halbert, J. J. ..... Duluth
Halenbeck, P. L. ..... St. Cloud
Hall, Buford ..... Rochester
Hall, B. E. ..... Rochester
Hall, H. B. ..... Minneapolis
Hall, W. E. ..... Maple Lake
Hall, W. H. ..... Minneapolis
Hallberg, C. A. ..... Minneapolis
Hallberg, O. E. ..... Rochester
Hallenbeck, D. F. ..... Rochester
Hallenbeck, G. A. ..... Rochester
Hallin, R. P. ..... Worthington
Halloran, W. H. ..... Jackson
Halme, W. B. ..... Cloquet
Halpern, D. J. ..... Brewster
Halpin, J. E. ..... Rush City
Hamilton, C. F. ..... Rochester
Hamlon, J. S. ..... St. Charles
†Hammerstad, L. M. ..... Minneapolis
Hammes, E. M. ..... St. Paul
Hammes, E. M., Jr. ..... St. Paul
Hammond, J. F. ..... St. Paul
Haney, C. L. ..... Duluth
Hankerson, R. G. ..... Minnesota Lake
Hanlon, D. G. ..... Rochester
Hanlon, G. H. ..... Rochester
Hannah, H. B. ..... Minneapolis
Hanover, R. D. ..... Littlefork
Hansen, C. O. ..... Minneapolis
Hansen, E. W. ..... Minneapolis
Hansen, Olga S. ..... Minneapolis
Hansen, R. E. ..... Hibbing
Hansen, T. M. ..... Albert Lea
Hanson, E. O. ..... Cloquet
Hanson, E. C. ..... New York Mills
Hanson, H. B. ..... St. Paul
Hanson, H. J. ..... Minneapolis
Hanson, H. V. ..... Minneapolis
Hanson, Lewis ..... Frost
Hanson, M. B. ..... Minneapolis
Hanson, N. O. ..... Rochester
Hanson, W. A. H. ..... Minneapolis
Happe, L. J. ..... Minneapolis
Hargraves, M. M. ..... Rochester
Harmon, G. E. ..... St. Paul
Hornagel, E. E. ..... Rochester
Harriman, Leonard .... Howard Lake
Harrington, S. W. ..... Rochester
Harris, C. N. ..... Hibbing
Harris, L. E. ..... Rochester
Harrison, P. W. ..... Worthington
Hart, G. M. ..... Rochester
Hart, V. L. ..... Minneapolis
Hart, W. E. ..... Monticello
Hartfiel, H. A. ..... Montevideo
Hartfiel, W. F. ..... St. Paul
Hartig, Hermina A. ..... Minneapolis
Hartig, Marjorie ..... St. Paul
Hartley, E. C. ..... St. Paul
Hartman, H. R. ..... Rochester
Hartnagel, G. F. ..... Red Wing
Hartung, E. H. ..... Claremont
†Hartzell, T. B. ..... Minneapolis
Harvard, B. M., Jr. ..... Rochester
Haskell, A. D. ..... Alexandria
Hass, F. M. ..... Jordan
Hassett, M. F. ..... St. Paul
Hassett, R. G. ..... Mankato
Hasskarl, W. F. ..... Rochester
Hastings, D. R. ..... Minneapolis
Hastings, D. W. ..... Minneapolis
Hatch, W. E. ..... Duluth
Hatcher, A. C. ..... Rochester
Hauch, E. W. ..... Rochester
Hauge, E. T. ..... Minneapolis
Hauge, M. I. ..... Clarkfield
Haugen, G. W. ..... Minneapolis
Haugen, I. A. ..... Minneapolis
Hauser, G. W. ..... Minneapolis

Hauser, P. J. ..... Austin
Hauser, V. P. ..... St. Paul
Havel, H. W. ..... Jordan
Haven, W. K. ..... Minneapolis
Havens, F. Z. ..... Rochester
Havens, J. G. W. ..... Austin
Hawkinson, R. P. ..... Minneapolis
Hay, Sam H. ..... Rochester
Hayes, A. F. ..... St. Paul
Hayes, D. W. ..... Rochester
Hayes, J. M. ..... Minneapolis
Hayes, M. F. ..... Nashwauk
Hayles, A. B. ..... Rochester
Haynes, A. L. ..... Rochester
Hays, A. T. ..... Minneapolis
Head, D. P. ..... Minneapolis
†Head, G. T. ..... Minneapolis
Hebbel, Robert ..... Minneapolis
Hebeisen, M. B. ..... Chaska
Heck, F. J. ..... Rochester
Heck, W. E. ..... Rochester
Heck, W. W. ..... St. Paul
†Hedback, A. E. ..... Minneapolis
Hedberg, G. A. ..... Nopeming
Hedemark, H. H. ..... Ortonville
Hedemark, T. A. ..... Ortonville
Hedenstrom, F. G. ..... St. Paul
Hedenstrom, L. H. ..... Cambridge
Hedenstrom, P. C. ..... Marshall
Hedin, R. F. ..... Red Wing
†Hegge, O. H. ..... Austin
Hegge, R. S. ..... Austin
Heiam, W. C. ..... Cook
Heiberg, E. A. ..... Fergus Falls
Heiberg, O. M. ..... Worthington
†Heilman, D. M. H. ..... Rochester
Heilman, F. R. ..... Rochester
Heim, R. R. ..... Minneapolis
Heimark, J. J. ..... Fairmont
Heinz, I. B. ..... Shakopee
Heinz, L. H. ..... Shakopee
Heise, C. ..... Winona
Heise, Herbert ..... Winona
Heise, Paul ..... Winona
Heise, P. R. ..... Winona
†Heise, W. F. C. ..... Winona
Heise, W. V. ..... Winona
Heisler, J. J. ..... Minneapolis
Helferty, J. K. ..... Minneapolis
†Helland, G. M. ..... Spring Grove
†Helland, J. W. ..... Spring Grove
Helmholz, H. F. ..... Rochester
Hempstead, B. E. ..... Rochester
†Hemstead, W. ..... Minneapolis
Hench, P. S. ..... Rochester
Henderson, A. J. G. ..... St. Paul
Henderson, E. D. ..... Rochester
Henderson, J. W. ..... Rochester
Henderson, M. S. ..... Rochester
Hendricks, E. J. ..... St. Paul
†Hendrickson, J. F. ..... Minneapolis
Hendrickson, R. R. ..... Lake Park
Hengstler, W. H. ..... St. Paul
Henney, W. H. ..... McIntosh
Henrikson, E. C. ..... Minneapolis
Henry, C. J. ..... Milaca
Henry, J. E. ..... Milaca
†Henry, C. E. ..... Kirksville, Mo.
Henry, M. O. ..... Minneapolis
Hensel, C. N. ..... St. Paul
Herbert, W. L. ..... Minneapolis
Herbst, R. F. ..... Wykoff
Herman, S. M. ..... St. Paul
Hermann, H. W. ..... Caledonia
Hermanson, P. E. ..... Hendricks
Heron, R. C. ..... St. Paul
Herrell, W. E. ..... Rochester
Herrmann, E. T. ..... St. Paul
Hertel, G. E. ..... Austin
Hertz, M. J. ..... St. Paul
Hesdorffer, M. B. ..... Minneapolis
Hetherington, J. A. ..... Rochester
Hewitt, Edith S. ..... Rochester
†Hewitt, R. M. ..... Rochester
†Heyerdale, O. C. ..... Rochester
Higgins, J. H. ..... Minneapolis
Hightower, N. C., Jr. .... Rochester
Hildebrand, C. H., Jr. ..... Rochester
Hilding, A. C. ..... Duluth
Hilger, A. W. ..... St. Paul
†Hilger, D. D. ..... St. Paul
Hilger, J. A. ..... St. Paul
Hilger, L. D. ..... St. Paul
Hilker, M. D. ..... St. Paul
Hill, E. M. ..... Minneapolis
Hill, F. E. ..... Duluth
Hill, I. R. ..... Rochester
Hill, W. C. ..... Windom
†Hillis, S. J. ..... St. Paul
Hills, O. W. ..... Rochester
Hilsabeck, J. R. ..... Rochester
Hinckley, R. G. ..... Minneapolis
Hines, E. A., Jr. ..... Rochester
Hiniker, L. P. ..... St. Paul
Hiniker, P. J. ..... Le Sueur

Hinshaw, H. C. ..San Francisco, Calif.
Hinz, W. E.....Bird Island
Hirschboeck, F. J. .....Duluth
Hirshfield, F. R.....Minneapolis
†Hitchcock, C. R.....Minneapolis
Hitchings, W. S.....Lakefield
†Hoaglund, A. W., Santa Monica, Calif.
Hochfilzer, J. J.....St. Paul
Hodapp, R. J.....Willmar
Hodgson, C. H.....Rochester
Hodgson, J. E.....St. Paul
Hodgson, J. R.....Rochester
Hoeper, P. G.....Mankato
*Hoff, Albert .....St. Paul
Hoff, H. O.....Duluth
Hoffbauer, F. W. .....St. Paul
Hoffert, H. E.....Minneapolis
Hoffman, R. A.....Minneapolis
Hoffman, W. L.....Minneapolis
Hoganson, D. E. .....Bemidji
Hogben, C. A. M.....Rochester
Hoidale, A. D.....Tracy
Holcomb, J. T....Marine-on-St. Croix
Holcomb, O. W.....St. Paul
Holland, C. R. .....Rochester
†Hollands, W. H. .....Fisher
Hollenhurst, R. W.....Rochester
Hollinshead, W. H. .....St. Paul
Holm, H. H.....Glencoe
†Holm, P. F.....Wells
Holman, Colin B.....Rochester
Holmberg, C. J.....Minneapolis
Holmberg, L. J.....Canby
Holmen, R. W.....St. Paul
Holmes, A. E.....Rush City
Holmstrom, C. H.....Warren
Holt, G. W. .....Fort Logan, Col.
Holt, J. E.....St. Paul
*Holtan, Theodore.....Waterville
Holzapfel, F. C.....Minneapolis
Hoon, J. R. .....Rochester
Hopkins, G. W.....St. Paul
Horan, M. J.....New York, N. Y.
Horning, E. D.....Rochester
Horns, R. C.....Minneapolis
Horton, B. T.....Rochester
Hottinger, R. C.....Janesville
†Houkom, Bjarne .....Minneapolis
Houkom, S. S.....Duluth
†House, Z. E. .....Burbank, Calif.
Hovde, Rolf.....Winthrop
Hovland, M. L.....Minneapolis
Howard, E. G. .....Mapleton
Howard, M. I.....Mankato
Howard, M. A.....St. Paul
Howard, S. E. .....Minneapolis
Howard, W. S.....St. Paul
Howe, N. W.....St. Paul
Howell, L. P.....Rochester
Hoyer, L. J.....Windom
Hubbard, O. E.....Brainerd
Hubin, E. G.....Sandstone
Hudec, E. R.....Echo
Hudson, G. E.....Minneapolis
Huenekens, E. J.....Minneapolis
Huffington, H. L.....Mankato
Hullsiek, H. E.....St. Paul
Hullsiek, R. B.....St. Paul
Hultgen, W. J.....St. Paul
Hultkrans, J. C.....Minneapolis
Hultkrans, R. E.....Minneapolis
Humphrey, E. W.....Moorhead
Humphrey, W. R.....Stillwater
Hunt, A. B.....Rochester
Hunt, R. C.....Fairmont
Hunt, R. S.....Fairmont
Hunt, William .....Rochester
Hunte, A. F.....Alhambra, Calif.
Hunter, J. S. .....Rochester
†Hurd, Annah.....Minneapolis
Hurwitz, M. M.....St. Paul
‡Hutchinson, C. J.....Minneapolis
Hutchinson, D. W.....Oak Terrace
Hutchinson, Henry.....Moose Lake
Hymes, Charles.....Minneapolis
†Hynes, J. E.....Minneapolis

†Ide, A. W.....St. Paul
Idstrom, L. G.....Wayzata
Ikeda, Kano.....St. Paul
Ingebrigtson, E. K. G.....Moorhead
Ingerson, C. A.....St. Paul
Irvine, H. G.....Minneapolis
Iverson, R. M. .....Minneapolis
Ivins, J. C. .....Rochester

Jackman, R. J.....Rochester
Jackson, A. E.....Rochester
Jackson, H. S.....Rochester
Jacobs, D. L.....Willmar
Jacobs, G. C.....Fergus Falls
†Jacobs, J. C.....Willmar
Jacobson, Clarence .....Chisholm
Jacobson, C. W.....Breckenridge
Jacobson, F. C. .....Duluth
James, E. M.....Minneapolis
Jamison, R. W. .....Rochester
Jampolis, R. W. .....Rochester
Janecky, A. G. .....Warroad
Janes, J. M.....Rochester
Janssen, M. E. .....Crookston
Jarrett, Paul S.....Rochester
Jennings, D. T. .....Rochester
Jensen, A. M.....Brownton
Jensen, E. J.....Rochester
Jensen, G. L.....Rochester
Jensen, H. C.....Minneapolis
†Jensen, M. J.....Minneapolis
Jensen, N. K. .....Minneapolis
Jensen, R. A. .....Minneapolis
Jensen, T. J.....Duluth
Jenson, J. E.....Stillwater
Jerome, B.....Minneapolis
Jeronimus, H. J.....Duluth
Jesion, J. W.....St. Paul
Jessico, C. M.....Duluth
Joffe, H. H. .....Duluth
Johanson, W. G.....St. Paul
Johnson, A. B. .....Rochester
Johnson, A. B.....Minneapolis
Johnson, A. E.....Minneapolis
Johnson, A. E.....Red Wing
Johnson, A. M. .....St. Paul
Johnson, B. H. .....Rochester
Johnson, C. C. .....Rochester
†Johnson, C. E. .....St. Paul
Johnson, C. E.....St. Paul
Johnson, C. P. .....Tyler
Johnson, D. L. .....Little Falls
Johnson, E. A.....Thief River Falls
Johnson, E. W.....Bemidji
Johnson, E. W., Jr.....Rochester
Johnson, E. W.....Minneapolis
Johnson, Evelyn V. ....Minneapolis
Johnson, Hans.....Kerkhoven
Johnson, H. A.....Minneapolis
Johnson, H. A.....Rochester
Johnson, H. C.....North Mankato
Johnson, H. C.....Thief River Falls
Johnson, H. W. .....Rochester
*Johnson, J. A. .....St. Paul
Johnson, J. A.....Minneapolis
Johnson, J. W. .....Minneapolis
Johnson, Julius.....Minneapolis
Johnson, K. E.....Duluth
Johnson, M. A.....Storden
Johnson, M. A., III .....Rochester
Johnson, M. D. .....Rochester
Johnson, M. R.....Minneapolis
†Johnson, N. A. ..Santa Monica, Calif.
Johnson, N. P.....Minneapolis
Johnson, N. T.....Minneapolis
Johnson, O. H.....Redwood Falls
Johnson, Olga H.....Moorhead
Johnson, R. B.....Lanesboro
Johnson, R. G.....Minneapolis
Johnson, R. G.....Stillwater
Johnson, Reuben A.....Minneapolis
Johnson, R. E.....Crookston
Johnson, R. E. .....Minneapolis
Johnson, V. M.....Dawson
Johnson, W. E.....Morgan
Johnson, Y. T.....Minneapolis
Johnsrud, L. W.....Chisholm
Johnston, L. F.....Winona
Johnstone, W. W. ....Ah-Gwah-Ching
Jolin, F. M.....Bovey
Jondahl, W. H. .....Rochester
†Jones, A. W.....Red Wing
Jones, E. M.....St. Paul
Jones, G. W. .....Rochester
†Jones, H. W., Jr. .....Minneapolis
Jones, J. R.....Rochester
Jones, O. H.....Mankato
Jones, R. N.....St. Cloud
Jones, W. R.....Minneapolis
†Jordan, Kathleen.....Granite Falls
Jordan, L. S.....Granite Falls
Josewich, Alexander.....Minneapolis
Josewski, R. J.....Stillwater
Joyce, G. L.....Rochester
Joyce, G. T. .....Rochester
Judd, E. S., Jr.....Rochester
Judd, W. H.....Washington, D. C.
Juergens, H. M.....Belle Plaine
Juergens, M. F. ....Thief River Falls
Juers, E. H.....Red Wing
Juliar, R. O. .....St. Clair
Jurdy, M. J.....Minneapolis
Just, Herman J.....Hastings

Kaasa, L. J. .....Albert Lea
Kabler, P. W.....Minneapolis
Kabrick, O. A. .....St. Peter
Kahiher, Howard.....Pelican Rapids
Kalin, O. T.....Minneapolis
Kallestad, L. L. .....Brownton
Kamman, G. R.....St. Paul
Kaplan, D. H.....St. Paul
Kaplan, H. A. .....Kimball
Kaplan, J. H. .....Rochester
Kaplan, J. J. .....Minneapolis
Kapsner, A. T.....Princeton
Karleen, B. N. .....Jackson
Karleen, C. I.....Minneapolis
Karlstrom, A. E.....Minneapolis
Karn, J. F.....Ortonville
Karon, I. M.....St. Paul
Kasper, E. M.....St. Paul
Kastee, J. D. .....Rochester
Kath, R. H.....Wood Lake
Katz, L. J.....St. Paul
†Katzovitz, Hyman .....St. Paul
Kaufman, E. J.....Appleton
Kaufman, H. J.....Minneapolis
Kaufman, W. B.....Mankato
Kaufman, W. C.....Appleton
Kearney, R. W.....Mankato
Keates, A. E. .....Rochester
Keating, F. R., Jr.....Rochester
Keating, J. U. .....Rochester
Keefe, R. E.....St. Paul
Keil, M. A. .....Mankato
Keith, H. M.....Rochester
Keith, N. M.....Rochester
Keithahn, E. E.....Sleepy Eye
Kelby, G. M.....Minneapolis
Kelley, E. P. .....Rochester
Kelly, A. C.....Duluth
Kelly, J. F.....Cold Spring
Kelly, J. P. .....Minneapolis
Kelly, J. V.....St. Paul
Kelsey, C. M.....St. Paul
Kelsey, J. R. .....Rochester
Kelty, R. H. .....Rochester
Kemp, A. F.....Mankato
Kemper, C. M.....Rochester
Kenefick, E. V.....St. Paul
Kennedy, C. C.....Minneapolis
Kennedy, G. L. .....Faribault
†Kennedy, J. F.....Minneapolis
Kennedy, R. L. J.....Rochester
Kennedy, W. A.....St. Paul
Kenyon, T. J. .....St. Paul
Kerkhof, A. C.....Minneapolis
Kernohan, J. W.....Rochester
Kertesz, G.....Minneapolis
Kesting, Herman.....St. Paul
*Kettlewell, R. B. .....Sauk Center
Keyes, J. D.....Winona
Kiely, W. F, ...Rochester
Kierland, R. R.....Rochester
Kiesler, F., Jr. .....Minneapolis
Kilbride, E. A. .....Worthington
†Kilbride, J. S. .....Worthington
Kimbrough, R. F. .....Rochester
Kimmel, G. C., Jr.....Red Wing
†King, E. A.....Minneapolis
King, F. W.....Oak Terrace
King, G. L.....St. Paul
King, L. M., Jr. .....Minneapolis
King, N. B.....Rochester
Kinsella, T. J.....Minneapolis
Kirby, T. J., Jr. .....Rochester
Kleckner, M. S. .....Rochester
Kirklin, B. R. .....Rochester
Kirklin, J. W.....Rochester
Kirkpatrick, N. R.....Rochester
Kistler, A. J.....Minneapolis
Klefstad, L. H.....Greenbush
Klein, Harry.....Duluth
Klein, H. N.....St. Paul
Klein, J. C.....Shakopee
Klein, Wm. A.....Duluth
Klima, W. W.....Stewart
Knapp, F. N.....Duluth
Knapp, M. E.....Minneapolis
Knight, C. D. .....Rochester
Knight, E. G. .....Swanville
Knight, R. R. .....Minneapolis
Knight, R. T. .....Minneapolis
Kniseley, R. M. .....Rochester
Knoll, W. V. .....Duluth
Knudsen, H. L. .....Minneapolis
Knudson, R. A. .....Forest Lake
Knutson, G. A. .....Hallock
Knutson, G. E. .....St. Paul
Knutson, J. R. B.....Rochester
Knutson, L. A. .....Spring Grove
Koelsche, G. A. .....Rochester
Koenigsberger, Charles .....Mankato
Koepcke, G. M. .....Minneapolis
Kohlbry, C. O. .....Duluth
Kohler, D. W. .....St. Joseph
Kolars, J. J. .....Faribault
Koller, H. M. .....Minneapolis
Koller, L. R. .....Minneapolis
Koop, S. H.....Richmond
Korchik, J. P. .....Minneapolis
Korda, H. A.....Pelican Rapids
Kortsch, F. P. .....Prior Lake
Koschnitzke, H. K. ....Detroit, Mich.
Kosiak, William .....Milaca

Koskela, A. L. ..... Deer River
Koskela, L. E. ..... Deer River
Kostick, W. R. ..... Fertile
Kotchevar, F. R. ..... Eveleth
Kottke, F. J. ..... Minneapolis
Kotval, R. J. ..... Pipestone
Koucky, R. W. ..... Minneapolis
Koza, Donald W. ..... Rochester
Kraemer, G. N. ..... Canby
Krakowka, G. F. ..... Rochester
Krause, C. W. ..... Fairmont
Kremen, A. J. ..... Minneapolis
Kreuzer, T. C. ..... Marshall
Krieser, A. E. ..... Mankato
Krueger, V. R. ..... Nopeming
Krusen, E. M. ..... Rochester
Kruzick, S. J. ..... Sleepy Eye
Krusen, F. H. ..... Rochester
Krystosek, L. A. ..... Clara City
Kucera, F. J. ..... Hopkins
Kucera, S. T. ..... Northfield
Kucera, W. J. ..... Minneapolis
Kugler, A. A. ..... St. Paul
Kuhlman, L. B. ..... Melrose
Kulwin, M. H. ..... Rochester
Kurtin, H. J. ..... Blooming Prairie
Kuske, A. W. ..... St. Paul
Kusske, A. L. ..... New Ulm
Kusske, B. W. ..... New Ulm
Kvale, W. F. ..... Rochester
Kvitrud, Gilbert ..... St. Paul

LaBree, J. W. ..... Minneapolis
LaBree, R. H. ..... Duluth
Lagaard, S. M. ..... Minneapolis
Laikola, L. A. ..... Adrian
Laird, A. T. ..... Duluth
Lajoie, J. M. ..... Minneapolis
Lake, C. F. ..... Rochester
Lamont, C. S. ..... Rochester
Lampert, E. G. ..... Rochester
Landry, R. M. ..... Rochester
Lang, C. M. ..... Rochester
Lang, L. A. ..... Minneapolis
Langhoff, A. H. ..... Mankato
Lannin, B. G. ..... St. Paul
Lannin, J. C. ..... Mabel
Lapierre, A. P. ..... Minneapolis
Lapierre, J. T. ..... Minneapolis
Larsen, C. L. ..... St. Paul
Larsen, F. W. ..... Minneapolis
Larson, Arnold ..... Detroit Lakes
Larson, C. M. ..... Minneapolis
Larson, E. A. ..... Minneapolis
Larson, Eva-Jane ..... St. Paul
Larson, J. T. ..... South St. Paul
Larson, K. R. ..... St. Paul
Larson, L. M. ..... Minneapolis
Larson, Leonard M. ..... Oak Terrace
Larson, Leroy ..... Bagley
Larson, L. J. ..... Watertown
Larson, M. H. ..... Nicollet
Larson, O. E. H. ..... Zumbrota
†Larson, P. G. ..... Cleveland, Ohio
Larson, P. N. ..... Minneapolis
Larson, R. H. ..... Minneapolis
Latterell, K. E. ..... Duluth
Laughlin, J. T. ..... Grey Eagle
La Vake, R. T. ..... Minneapolis
Law, S. G. ..... Minneapolis
Lax, M. H. ..... St. Paul
Laymon, C. W. ..... Minneapolis
Leahy, Bartholomew ..... St. Paul
Leary, W. V. ..... Rochester
Leavenworth, R. O. ..... St. Paul
†Leavitt, H. H. ..... Minneapolis
Lebowske, J. A. ..... Minneapolis
Leck, P. C. ..... Austin
Leden, U. M. ..... Rochester
Leddy, E. T. ..... Rochester
Lee, H. M. ..... Minneapolis
Lee, H. W. ..... Brainerd
Lee, M. J., Jr. ..... Rochester
Lee, N. J. ..... St. Paul
Lee, W. N. ..... Madison
Leemhuis, G. H. ..... Aitkin
Leibold, H. H. ..... Parkers Prairie
Leick, R. M. ..... St. Paul
Leitch, Archibald ..... St. Paul
Leitschuh, T. H. ..... Winsted
Leland, H. R. ..... Minneapolis
Lemon, W. F. ..... Rochester
†Lemon, W. S. ..... Rochester
Lenander, M. E. L. ..... St. Peter
Lenarz, A. J. ..... Browerville
Lende, Norman ..... Faribault
Lengby, F. A. ..... Minneapolis
Lenz, J. R. ..... Morton
Lenz, O. A. ..... Minneapolis
Leonard, L. J. ..... Minneapolis
Leonard, Samuel ..... Minneapolis
Leopard, B. A. ..... Albert Lea
Lepak, F. J. ..... Duluth
Lepak, J. A. ..... St. Paul
†Lerche, William ..... Cable, Wis.

Lerner, A. R. ..... Minneapolis
Leven, N. L. ..... St. Paul
Leverenz, C. W. ..... St. Paul
Levin, Bert ..... St. Paul
Levin, Louis ..... Rochester
Levitt, G. X. ..... St. Paul
Lewis, A. J. ..... Henning
Lewis, C. B. ..... St. Cloud
Lewis, M. L., Jr. ..... Rochester
Lexa, F. J. ..... Lonsdale
Libert, J. N. ..... St. Cloud
Lick, C. L. ..... St. Paul
Liedloff, A. G. ..... Mankato
Lien, R. J. ..... St. Paul
Liffrig, W. W. ..... Red Wing
Lightbourn, E. L. ..... St. Paul
Lilleberg, N. J. ..... St. Paul
Lillehei, E. J. ..... Robbinsdale
Lillie, H. I. ..... Rochester
Lillie, W. I. ..... Rochester
*Lima, L. R. ..... Montevideo
Lima, L. R., Jr. ..... Montevideo
Limbacker, H. P. ..... Austin
Lind, C. J. ..... Minneapolis
‡Lind, C. J., Jr. ..... Minneapolis
Lindberg, A. L. ..... Wheaton
Lindberg, A. C. ..... Minneapolis
Lindberg, V. L. ..... Minneapolis
Lindberg, W. R. ..... Minneapolis
Lindblom, A. E. ..... Minneapolis
†Linde, Herman ..... Cyrus
Lindgren, R. C. ..... Minneapolis
Lindley, S. B. ..... Willmar
Lindquist, R. H. ..... Minneapolis
Linner, H. P. ..... Minneapolis
Linner, J. H. ..... Minneapolis
Lippman, E. S. ..... Minneapolis
Lippman, H. S. ..... St. Paul
Lippmann, E. W. ..... Hutchinson
Lipschultz, Oscar ..... Minneapolis
Lipscomb, P. R. ..... Rochester
Litchfield, J. T. ..... Minneapolis
Litman, A. B. ..... Minneapolis
Litman, S. N. ..... Duluth
Livermore, G. R. ..... Rochester
*Litzenberg, J. C. ..... Minneapolis
Llewellyn, M. B. ..... Minneapolis
Locke, William ..... Boston, Mass.
Lofsness, S. V. ..... Minneapolis
Logan, Arch, Jr. ..... Rochester
Logan, A. H. ..... Rochester
Logan, G. B. ..... Rochester
Logefeil, R. C. ..... Minneapolis
Lohmann, J. G. ..... Pipestone
Loken, S. M. ..... St. Paul
Loken, Theodore ..... Ada
Lommen, P. A. ..... Austin
Long, J. W. ..... Rochester
Longfellow, Helen B. W. ..Brainerd
†Loofbourrow, E. H. ..... Keewatin
Loomis, E. A. ..... Minneapolis
Loomis, G. L. ..... Winona
Lott, F. H. ..... Minneapolis
Love, F. A. ..... Carlos
Love, J. G. ..... Rochester
Lovelady, S. B. ..... Rochester
Lovett, Beatrice R. ..... Oak Terrace
Lowe, E. R. ..... So. St. Paul
Lowe, T. A. ..... So. St. Paul
Lowman, E. W. ..... Rochester
Lowry, Elizabeth C. ..... Minneapolis
Lowry, Thomas ..... Minneapolis
Lowy, A., Jr. ..... Rochester
Lucas, J. E. ..... Rochester
Luck, Hilda ..... Mankato
Luckemeyer, C. J. ..... St. Cloud
Luellen, T. J. ..... Rochester
Lufkin, N. H. ..... Minneapolis
Lund, C. J. T. ..... Fergus Falls
Lund, W. J. ..... Staples
Lundberg, Ruth I. ..... Minneapolis
Lundblad, R. A. ..... Minneapolis
Lundblad, S. W. ..... Minneapolis
Lundell, C. L. ..... Granite Falls
Lundgren, A. C. ..... Minneapolis
Lundholm, A. M. ..... St. Paul
Lundquist, C. W. ..... Owatonna
Lundquist, E. F. ..... Minneapolis
Lundy, J. S. ..... Rochester
Luth, D. V. ..... Duluth
Luttgens, W. F. ..... Rochester
Lynch, F. W. ..... St. Paul
Lynch, J. L. ..... Santa Ana, Calif.
†Lynch, M. J. ..... Minneapolis
Lynde, O. G. ..... Thief River Falls
Lysne, Henry ..... Minneapolis
Lysne, Myron ..... Minneapolis

MacCarty, C. S. ..... Rochester
‡MacCarty, W. C. ..... Rochester
†MacDonald, A. E. ..... Minneapolis
MacDonald, D. A. ..... Minneapolis
MacDonald, R. A. ..... Littlefork
MacFarlane, P. H. ..... Chisholm
Mach, F. B. ..... Minneapolis

Mack, J. J. ..... Little Rock, Ark.
MacKinnon, D. C. ..... Minneapolis
Macklin, W. E., Jr. ..... Mankato
MacLean, A. R. ..... Rochester
MacMillan, D. G. ..... Minneapolis
MacMurtrie, W. J., Jr. ..... Rochester
Macnie, J. S. ..... Minneapolis
MacRae, G. C. ..... Duluth
Madden, J. F. ..... St. Paul
Madland, R. S. ..... St. Paul
Maeder, E. C. ..... Minneapolis
Maertz, R. W. ..... Goodhue
Maertz, W. F. ..... St. Paul
Magath, T. B. ..... Rochester
Magney, F. H. ..... Duluth
Magnuson, A. E. ..... Wheaton
Magraw, R. M. ..... St. Paul
Mahle, D. G. ..... Plainview
Mahowald, A. ..... Albany
Maino, V. J. ..... Rochester
Maitland, E. T. ..... Jackson
Maland, C. O. ..... Minneapolis
Malerich, J. A. ..... St. Paul
Malmstrom, J. A. ..... Virginia
Mankey, J. C. ..... Minneapolis
†Mann, F. C. ..... Rochester
Mann, F. D. ..... Rochester
†Manson, F. M. ..... Worthington
†Marcley, W. J. ..... Minneapolis
Mariette, E. S. ..... Oak Terrace
*Mark, D. B. ..... Minneapolis
Mark, Hilbert ..... Minneapolis
Marking, G. H. ..... Minneapolis
Marks, R. W. ..... St. Paul
Marshall, T. M. ..... Rochester
Martin, D. L. ..... St. Paul
Martin, G. R. ..... Minneapolis
Martin, G. M. ..... Rochester
Martin, T. P. ..... Arlington
Martin, W. B. ..... Rochester
Martin, W. C. ..... Duluth
Martineau, J. L. ..... St. Paul
Martinson, C. J. ..... Wayzata
†Martinson, E. J. ..... Wayzata
Masson, D. M. ..... Rochester
Masson, J. C. ..... Rochester
†Matchan, G. R. ..... Minneapolis
Matthews, Justus ..... Minneapolis
Mattill, P. M. ..... Oak Terrace
Mattison, P. A. ..... Winona
Mattson, H. A. N. ..... Minneapolis
Maunder, J. B. ..... Detroit, Mich.
Maxeiner, S. R. ..... Minneapolis
Mayne, R. M. ..... Nopeming
Mayo, C. W. ..... Rochester
Maytum, C. K. ..... Rochester
McAdams, J. B. ..... St. Paul
McBean, J. B. ..... Rochester
McBurney, R. P. ..... Rochester
McCaffrey, F. J. ..... Minneapolis
McCain, D. L. ..... St. Paul
McCann, D. F. ..... Bemidji
McCann, Eugene J. ..... Minneapolis
McCarten, F. M. ..... Stillwater
McCarthy, A. M. ..... Willmar
McCarthy, Donald ..... Minneapolis
McCarthy, J. J. ..... St. Paul
McCarthy, W. R. ..... St. Paul
McCartney, J. S. ..... Minneapolis
†McCarty, P. D. ..... Ely
McClanahan, J. H. ..... White Bear
McClanahan, T. S. ..... White Bear
McClellan, J. T. ..... Rochester
McCloud, C. N. ..... St. Paul
McConahey, W. M., Jr. ..... Rochester
McCorkle, J. K. ..... Rochester
McCormack, L. J. ..... Rochester
McCormick, D. ..... Minneapolis
†McCoy, Mary K. ..... Duluth
McCreight, W. G. ..... Rochester
‡McCrimmon, H. P. ..... Minneapolis
†McDaniel, Orianna ..... Minneapolis
McDonald, A. L. ..... Duluth
McDonald, J. R. ..... Rochester
McDowell, J. P. ..... St. Cloud
McElin, T. W. ..... Rochester
McEnaney, C. T. ..... Owatonna
McEwan, Alexander ..... St. Paul
McFarland, A. H. ..... Minneapolis
McGandy, R. F. ..... Minneapolis
McGeary, G. E. ..... Minneapolis
McGeary, M. D. ..... Brainerd
McGroarty, J. J. ..... Easton
McGuigan, H. T. ..... Red Wing
McHaffie, O. L. ..... Duluth
McInerny, M. W. ..... Minneapolis
McIntire, H. M. ..... Waseca
McIntyre, J. A. ..... Owatonna
McIver, B. A. ..... Lowry
McKaig, C. B. ..... Pine Island
McKelvey, J. L. ..... Minneapolis
McKenna, J. K. ..... Austin
McKenna, M. J. ..... Grand Rapids
McKenzie, C. H. ..... Minneapolis

McKinlay, C. A. .....Minneapolis
†McKinley, J. C. .....Minneapolis
McKinney, F. S. .....Minneapolis
McLane, Wm. O. .....Wadena
†McLaren, Jennette M. ..Minneapolis
McLaughlin, B. H. .....Rochester
McLeod, J. L. .....Grand Rapids
McLeod, J. J. .....Olivia
McMahon, J. M. .....Rochester
McMahon, M. J. .....Green Isle
McManus, W. F. .....Princeton
McMillan, J. T. .....Rochester
McMurtrie, W. B. .....Minneapolis
McNaughton, R. A. .....Rochester
McNutt, J. R. .....Duluth
McPheeters, H. O. ....Minneapolis
†McQuarrie, Irvine .....Minneapolis
McWhorter, H. E. .....Rochester
Mead, C. H. .....Duluth
Meade, J. R. .....St. Paul
Meadows, E. R. .....Rochester
Mears, B. J. .....St. Paul
Medelman, J. P. .....St. Paul
Medlin, C. F. .....Truman
Medwick, J. X. .....Rochester
Meinert, A. E. .....Winona
Melancon, J. F. .....St. Paul
Melby, Benedik ..Blooming Prairie
Meller, R. L. .....Minneapolis
Melzer, G. R. .....Lyle
Menold, Wm. F. .....St. Paul
Mercil, W. F. .....Crookston
Merendino, A. A. .....Seattle, Wash.
Merkert, C. E. .....Minneapolis
Merkert, G. L. .....Minneapolis
Merner, T. B. .....Minneapolis
†Merrick, Charlotte T. ....Minneapolis
†Merrill, Elisabeth .....Minneapolis
Merrill, J. G. .....Rochester
Merrill, R. W. .....Morris
Merriman, L. L. .....Duluth
Merritt, W. A. .....Rochester
Meyer, A. A. .....Melrose
Meyer, A. J. .....Minneapolis
Meyer, E. L. .....Minneapolis
Meyer, J. O. .....Grand Rapids
Meyerding, E. A. .....St. Paul
Meyerding, H. W. .....Rochester
Michael, J. C. .....Minneapolis
Michel, H. H. .....Minneapolis
Michels, R. P. .....Willmar
Michelson, H. E. .....Minneapolis
†Mickelsen, Emma F. .....Minneapolis
Mickelson, J. C. .....Mankato
Michienzi, L. J. .....St. Paul
Milburn, G. B. .....Rochester
Milhaupt, E. N. .....St. Cloud
Millen, F. J. .....Rochester
Miller, E. W. .....Anoka
Miller, E. M. .....Rochester
Miller, H. E. .....Minneapolis
Miller, Hugo E. .....Minneapolis
Miller, J. C. .....Minneapolis
Miller, J. R. .....Rochester
Miller, John R. .....Rochester
Miller, V. I. .....Mankato
Miller, W. A. .....New York Mills
Miller, W. R. .....Red Wing
Mills, J. L. .....Winnebago
Mills, M. D. .....Rochester
Mills, S. D. .....Rochester
Milton, J. S. .....Minneapolis
Minsky, A. A. .....Minneapolis
Minty, E. W. .....Duluth
Mitchell, B. D. .....Minneapolis
Mitchell, E. C. .....Minneapolis
Mitchell, M. T. .....Minneapolis
Mixer, H. W. .....Minneapolis
Moberg, C. W. .....Detroit Lakes
Moe, Allen E. .....Moorhead
Moe, J. H. .....Minneapolis
Moe, R. J. .....Duluth
Moe, Thomas .....Moose Lake
Moen, J. K., Jr. .....Minneapolis
Moehn, J. T. .....Minneapolis
Moehring, H. G. .....Duluth
Moersch, F. P. .....Rochester
Moersch, H. J. .....Rochester
Moersch, R. U. .....Rochester
Moga, J. A. .....St. Paul
Molander, H. A. .....St. Paul
Mollers, T. P. .....Soudan
†Monohan, Eliz. S. .....Minneapolis
Monroe, P. B. .....Cloquet
Monserud, N. O. .....Cloquet
Monson, E. M. .....Minneapolis
Monson, L. J. .....Canby
Monsour, K. J. .....Rochester
Montgomery, G. E. .....Rochester
Montgomery, Hamilton ....Rochester
Moore, I. H. .....Minneapolis
Moos, D. J. .....Minneapolis
Moquin, Marie A. .....St. Paul
Morehead, D. E. .....Owatonna

Moren, Edward .....Minneapolis
Moren, J. A. .....St. Paul
Morgan, E. H. .....Rochester
Morgan, H. O. .....Amboy
Morgan, J. L. .....Rochester
Moriarty, Berenice .....St. Paul
Moriarty, Cecile R. .....St. Paul
Mork, A. H. .....Anoka
Mork, B. O., Jr. .....Worthington
*Mork, B. O., Sr. .....Worthington
Mork, F. E. .....Anoka
Morlock, C. G. .....Rochester
Morris, C. R. .....Rochester
Morris, D. S. .....Rochester
Morrison, A. E., Jr. .....Rochester
*Morrison, A. W. .....Minneapolis
Morrison, Charlotte J. ..Minneapolis
Morrison, R. W. .....Rochester
Morrow, R. P. .....Rochester
Morse, M. P. .....Le Roy
Morse, R. W. .....Minneapolis
Morseman, L. W. .....Hibbing
Morton, Glenn H. .....Rochester
Mosby, M. E. .....Long Prairie
Mouritsen, G. J. .....Fergus Falls
Mueller, Selma C. .....Duluth
Muir, W. F. .....Browns Valley
Muller, A. E. ....North Saint Paul
Muller, R. T. .....St. Paul
Mulligan, A. M. .....Brainerd
Murphy, E. P. .....Minneapolis
Murphy, I. J. .....Minneapolis
Murphy, J. E. .....Marshall
Murphy, James E. .....St. Cloud
Murphy, M. E. .....Rochester
Murphy, M. H. .....Rochester
Murray, R. A. .....Hibbing
Musachio, N. F. .....Foley
Musgrove, J. E. .....Rochester
Mussey, Mary E. .....Rochester
Mussey, R. D. .....Rochester
†Musty, N. J. .....Minneapolis
Myers, J. A. .....Minneapolis
Myers, T. T. .....Rochester
Myre, C. R. .....Paynesville

Nachtwey, Robert A. .....Rochester
Naegeli, A. E. .....St. Paul
Naegeli, Frank. .....Fergus Falls
Nagel, H. D. .....Waconia
Nash, L. A. .....St. Paul
Naslund, A. W. .....Minneapolis
Nauth, B. S. .....Winona
Navratil, D. R. .....Montgomery
Neal, J. M. .....Minneapolis
Nealy, D. E. .....Adrian
Neary, R. P. .....Minneapolis
Neel, H. B. .....Albert Lea
Neff, W. S. .....Virginia
Nehring, J. P. .....Preston
Nelson, A. S. ....Thief River Falls
Nelson, Bernette G. .....Menagha
Nelson, Bernice A. .....Menahga
Nelson, C. B. .....Minneapolis
Nelson, C. E. J. .....Albert Lea
Nelson, C. G. .....Harmony
Nelson, F. J. .....Owatonna
Nelson, E. N. .....Minneapolis
Nelson, G. E. .....Fairfax
†Nelson, H. S. ....Los Angeles, Calif.
Nelson, K. L. .....Clara City
†Nelson, L. A. .....St. Paul
Nelson, L. S. .....Minneapolis
Nelson, M. C. .....Minneapolis
Nelson, M. S. .....Granite Falls
Nelson, N. H. .....Minneapolis
Nelson, N. P. .....Brainerd
Nelson, O. L. N. .....Minneapolis
Nelson, R. A. .....Fergus Falls
Nelson, P. A. .....Rochester
Nelson, R. L. .....Duluth
Nelson, W. I. .....Minneapolis
Nelson, W. O. B. .....Fergus Falls
Nesbitt, Samuel. .....Minneapolis
Nesheim, M. O. .....Emmons
Nessa, C. B. .....St. Cloud
Nesset, L. B. .....Minneapolis
Neumaier, Arthur .....Glencoe
New, G. B. .....Rochester
Nichols, D. R. .....Rochester
Nicholson, J. W. .....Rochester
Nicholson, M. A. .....Duluth
Nickerson, J. R. .....Heron Lake
Nickeson, R. W. .....Rochester
Nietfeld, A. B. .....Warren
Nilson, H. J. .....North Mankato
Ninneman, N. N. .....Waconia
Nix, J. T. .....Rochester
Nixon, J. B. .....Crosby
Noble, J. F. .....St. Paul
Noble, J. L. .....St. Paul
Noehren, T. H. .....Rochester
Nolan, D. E. .....Dayton, Ohio
Noonan, W. J. .....Minneapolis

Noran, A. S. N. .....Minneapolis
Noran, H. H. .....Minneapolis
Norberg, C. E. .....Cloquet
Nord, R. E. .....Minneapolis
Nordin, G. T. .....Minneapolis
Nordland, Martin .....Minneapolis
Nordman, W. F. .....Mora
Norman, J. F. .....Crookston
Norris, N. T. .....Caledonia
†Noth, H. W. .....Minneapolis
Novak, E. E. .....New Prague
Norval, M. A. .....Rochester
Nowak, D. J. .....Rochester
Nuebel, C. J. .....Hudson, Wisconsin
Nuessle, W. G. .....Springfield
Nutting, R. E. .....Duluth
Nydahl, M. J. .....Minneapolis
Nye, Katherine A. .....St. Paul
Nye, Lillian L. .....St. Paul
Nygren, W. T. .....Braham
Nylander, E. G. .....Minneapolis
Nystrom, Ruth G. .....Minneapolis

†Oberg, C. M. .....Minneapolis
O'Brien, J. C. .....St. Paul
O'Brien, L. T. .....Breckenridge
O'Brien, W. M. .....St. Paul
Ochsnner, C. G. .....Wabasha
Ockuly, Orville. .....St. Paul
O'Connor, D. C. .....Eden Valley
O'Connor, L. J. .....St. Paul
Odel, H. M. .....Rochester
Odessky, Louis. .....Augusta, Ga.
O'Donnell, D. M. .....Ortonville
O'Donnell, J. E. .....Minneapolis
Oeljen, S. C. G. .....Waseca
Ogden, Warner .....St. Paul
Ohage, Justus, Jr. .....St. Paul
O'Hanlon, J. A. .....Lindstrom
O'Kane, T. W. .....St. Paul
O'Keefe, J. P. .....St. Cloud
Olds, G. H. .....New Richland
O'Leary, J. H. .....St. Paul
O'Leary, P. A. .....Rochester
Oliver, I. L. .....Graceville
Oliver, James .....Moorhead
Olmanson, E. G. .....St. Peter
Olsen, A. M. .....Rochester
Olsen, E. G. .....Minneapolis
Olsen, R. L. .....St. Paul
Olson, A. C. .....Minneapolis
Olson, A. E. .....Duluth
Olson, A. J. .....Owatonna
Olson, A. O. .....Duluth
Olson, B. G. .....Minneapolis
Olson, C. A. .....St. Paul
Olson, C. J. .....Belle Plaine
Olson, D. O. C. .....Gaylord
Olson, E. A. .....Pine Island
Olson, G. E. .....West Concord
Olson, J. W. .....Minneapolis
Olson, L. A. .....Ah-Gwah-Ching
†Olson, O. A. .....Minneapolis
Olson, S. W. .....Rochester
O'Neill, J. C. .....Duluth
Onsgard, L. K. .....Houston
Oppegaard, C. L. .....Crookston
Oppegaard, M. O. .....Crookston
Oppen, E. G. .....Minneapolis
O'Reilley, B. E. .....St. Paul
Osborn, J. E. .....Rochester
Ostergren, E. W. .....St. Paul
Otto, H. C. .....Frazee
Ouellette, A. J. .....St. Paul
Owen, C. A. J. .....Rochester
Owens, W. A. .....Montevideo
†Owre, Oscar .....Minneapolis

Page, R. L. .....St. Charles
Painter, R. C. .....Rochester
Palazzo, F. A. .....Rochester
Palen, B. J. .....Minneapolis
Palmer, C. F. .....Albert Lea
Palmer, H. A. .....Blackduck
†Palmer, W. L. .....Albert Lea
Palmerton, E. S. .....Albert Lea
Pankratz, P. J. ....Mountain Lake
Papermaster, R. .....Two Harbors
Papermaster, T. C. .....Minneapolis
†Parker, O. W. .....Ely
Parker, H. L. .....Rochester
Parker, R. L. .....Rochester
Parker, W. E. .....Sebeka
Parkhill, Edith M. .....Rochester
Parkin, T. W. .....Rochester
Parkinson, Dwight. .....Rochester
Parson, E. I. .....Duluth
Parson, Lillian B. .....Elbow Lake
Parson, L. R. .....Elbow Lake
†Parsons, J. G. .....Crookston
Parsons, R. L. .....Monterey
Paschall, J., Jr. .....Pasadena, Calif.
Pasek, A. W. .....Cloquet
*Passer, A. A. .....Olivia
Patch, O. B. .....Duluth

Patey, R. T. ..... Buhl
Patterson, H. D. ..... Slayton
Patterson, S. A. ..... Pennsylvania
Patterson, W. L. ..... Fergus Falls
Patton, M. M., Jr. ..... Rochester
Paulson, G. S. ..... Rochester
Paulson, J. A. ..... Rochester
Paulson, T. S. ..... Fergus Falls
Peabody, H. D. ..... Rochester
Pearsall, R. P. ..... Virginia
Pearson, B. F. ..... Shakopee
Pearson, F. R. ..... St. Paul
Pearson, L. O. ..... Warroad
Pearson, M. M. ..... St. Paul
Pearson, R. T. ..... Shakopee
Pease, Gertrude L. ..... Rochester
Pedersen, A. H. ..... St. Paul
Pedersen, R. C. ..... Duluth
Pemberton, J. deJ. ..... Rochester
Pender, J. W. ..... Rochester
Penhall, F. W. ..... Willmar
Penk, E. L. ..... Springfield
Penn, G. E. ..... Mankato
Pennie, D. F. ..... Duluth
Peppard, T. A. ..... Minneapolis
Perkins, R. F. ..... Rochester
Perry, E. L. ..... Rochester
Person, J. P. ..... Albert Lea
Pertl, A. L. ..... Canby
Peters, G. A. ..... Rochester
Petersen, G. L. ..... Minneapolis
†Petersen, J. R. ..... Minneapolis
Petersen, M. C. ..... Rochester
Petersen, P. C. ..... Mora
Petersen, R. T. ..... St. Cloud
Peterson, C. A. ..... Minneapolis
Peterson, D. B. ..... St. Paul
Peterson, D. H. ..... St. Paul
Peterson, E. N. ..... Virginia
Peterson, H. O. ..... St. Paul
Peterson, H. W. ..... Minneapolis
Peterson, I. L. E. ..... St. Paul
Peterson, J. H. ..... Duluth
Peterson, Kenneth ..... Marshall
Peterson, K. H. ..... Hutchinson
Peterson, L. J. ..... Minneapolis
Peterson, N. P. ..... Minneapolis
Peterson, O. L. ..... Cokato
Peterson, O. H. ..... Minneapolis
Peterson, P. E. ..... Minneapolis
Peterson, R. A. ..... Vesta
Peterson, S. C. ..... Austin
Peterson, W. C. ..... Minneapolis
Peterson, W. E. ..... Willmar
Peterson, W. H. ..... Owatonna
Peterson, W. Henry ..... Minneapolis
Petit, J. V. ..... Minneapolis
Petit, L. J. ..... Minneapolis
Petkevich, F. M. ..... St. Cloud
Petraborg, H. T. ..... Aitkin
Pewters, J. T. ..... Minneapolis
Peyton, W. T. ..... Minneapolis
Pfuetze, K. H. ..... Cannon Falls
Pfunder, M. C. ..... Minneapolis
Phares, Otto C. ..... St. Cloud
Phares, W. S. ..... Rochester
Phelps, K. A. ..... Minneapolis
Pierce, C. H. ..... Wadena
Pierce, R. B. ..... Wadena
Pierson, R. F. ..... Slayton
Piper, M. C. ..... Rochester
Piper, W. A. ..... Mountain Lake
Plasha, M. K. ..... Lowry
Plass, H. F. R. ..... Minneapolis
Platou, E. S. ..... Minneapolis
Pleissner, K. W. ..... St. Louis Park
Plimpton, N. C., Jr. ..... Minneapolis
Plondke, F. J. ..... St. Paul
*Plummer, W. A. ..... Rochester
Pogue, R. E. ..... Watertown
Pohl, J. F. M. ..... Minneapolis
Poirier, J. A. ..... Forest Lake
Pollack, A. A. ..... Rochester
Pollard, D. W. ..... Minneapolis
Polley, H. F. ..... Rochester
Polski, P. G. ..... So. St. Paul
Polzak, J. A. ..... Minneapolis
Ponterio, J. E. ..... Shakopee
Pool, T. L. ..... Rochester
Poore, T. N. ..... Rochester
Popp, W. C. ..... Rochester
Poppe, F. H. ..... Minneapolis
Porter, C. B. ..... Rochester
Porter, G. E. ..... Rochester
Porter, O. M. ..... Willmar
Posey, E. L., Jr. ..... Rochester
Potek, D. ..... International Falls
Potter, R. B. ..... Minneapolis
Potthoff, C. J. ..... Washington, D. C.
Power, J. E. ..... Duluth
Powers, F. H. ..... Rochester
Prangen, A. D. ..... Rochester
Pratt, J. H., Jr. ..... Rochester
†Pratt, Fred J., Sr. ..... Minneapolis
Pratt, F. J., Jr. ..... Minneapolis
Preine, I. A. ..... Minneapolis
Preisinger, J. W. ..... Renville
Prendergast, H. J. ..... St. Paul
Preston, P. J. ..... Minneapolis
Prewitt, G. M. ..... Rochester
Prickman, L. E. ..... Rochester
Pridgen, J. E. ..... Rochester
Priest, R. E. ..... Minneapolis
Priestly, J. T. ..... Rochester
†Prim, J. A. ..... Minneapolis
Prins, L. R. ..... Albert Lea
Proeschel, R. K. ..... Willmar
Proffitt, W. E. ..... Minneapolis
Proshek, C. E. ..... Minneapolis
Prough, W. A. ..... Rochester
Pruitt, R. D. ..... Rochester
Pugh, D. G. ..... Rochester
Purves, G. H. ..... Hendricks
Pumula, E. E. ..... Warren
Putman, H. C., Jr. ..... Rochester
Puumala, R. H. ..... Cloquet
Pyle, Marjorie M. ..... Cannon Falls

Quanstrom, V. E. ..... Brainerd
Quattlebaum, Frank ..... St. Paul
Quello, R. O. B. ..... Minneapolis
Quist, H. W. ..... Minneapolis
Quist, H. W., Jr. ..... Minneapolis

Raadquist, C. S. ..... Hibbing
Radabaugh, R. C. ..... Hastings
Rae, James W. ..... Rochester
Raetz, S. J. ..... Maple Lake
Raihala, John ..... Virginia
Raiter, R. F. ..... Cloquet
Rall, J. E. ..... Rochester
Ralph, J. R. ..... St. Paul
Ralston, D. E. ..... Rochester
Ramsey, W. H., II ..... Rochester
†Ramsey, W. R. ..... St. Paul
Randall, A. M. ..... Ashby
Randall, L. M. ..... Rochester
Randall, R. V. ..... Rochester
Randall, S. J. ..... Rochester
Randall, W. H. ..... Rochester
Ransom, H. R. ..... Osseo
Ransom, M. L. ..... Hancock
Rasmussen, W. C. ..... Rochester
†Ratcliffe, J. J. ..... Aitkin
Ratke, H. V. ..... Rochester
Rea, C. E. ..... St. Paul
Reader, D. R. ..... Minneapolis
Rechlitz, E. T. ..... Albert Lea
Reed, Paul ..... Virginia
Reeve, E. T. ..... Elbow Lake
Reff, A. R. ..... Crookston
Regan, J. J. ..... Minneapolis
Regnier, E. A. ..... Minneapolis
Reid, J. W. ..... St. Paul
Reid, L. M. ..... Excelsior
Reif, H. A. ..... Minneapolis
Reif, H. J. ..... St. Cloud
Reiley, R. E. ..... Minneapolis
†Reineke, G. F. ..... New Ulm
Reitmann, J. H. ..... Hastings
ReMine, W. H., Jr. ..... Rochester
Remsberg, R. R. ..... Tracy
†Replogle, W. H. ..... Los Angeles, Calif.
Resch, J. A. ..... Minneapolis
Reynolds, J. L. ..... Rochester
*Reynolds, J. S. ..... Minneapolis
Rice, C. O. ..... Minneapolis
Rice, H. G. ..... Aitkin
Rice, R. G. ..... Minneapolis
Richards, E. T. F. ..... St. Paul
Richards, W. B. ..... St. Cloud
Richardson, H. E. ..... St. Paul
Richardson, R. J. ..... St. Paul
Richdorf, L. F. ..... Minneapolis
Rick, P. F. W. ..... St. Paul
Ricks, H. C., Jr. ..... Rochester
Riddell, R. V. ..... Rochester
Ridgway, A. M. ..... Annandale
Ridley, R. W. ..... Rochester
Riegel, G. S. ..... Taylors Falls
Rieke, W. W. ..... Wayzata
Rigler, L. G. ..... Minneapolis
Ringle, O. F. ..... Walker
Rinkey, Eugene ..... St. Paul
Riordan, Elsie M. ..... Minneapolis
Ripple, R. J. ..... New London
Risch, R. E. ..... Minneapolis
Risser, A. F. ..... Stewartville
Ritchie, W. P. ..... St. Paul
Ritt, A. E. ..... St. Paul
*Rivers, A. B. ..... Rochester
Rizer, D. K. ..... Minneapolis
Rizer, R. I. ..... Minneapolis
Roan, O. M. ..... Minneapolis
Robb, E. F. ..... Minneapolis
†Robbins, C. P. ..... Winona
Robbins, O. F. ..... Minneapolis
Roberts, L. J. ..... Minneapolis
Roberts, N. J. ..... Rochester
Roberts, O. W. ..... Owatonna
Roberts, S. W. ..... Minneapolis
Roberts, W. B. ..... Minneapolis
†Robertson, J. B. ..... Minneapolis
Robertson, P. A. ..... Austin
Robilliard, C. M. ..... Faribault
Robinett, R. W. ..... Worthington
†Robinson, J. M. ..... Goshen, N. Y.
Rockwell, C. V. ..... Minneapolis
Rockwood, Philo H. ..... Fergus Falls
Rodda, F. C. ..... Minneapolis
Rodgers, C. L. ..... Minneapolis
Rodgers, R. S. ..... Minneapolis
Roehlke, A. B. ..... Elk River
Roemer, H. J. ..... Winona
Rogers, C. W. ..... Winona
Rogers, J. D. ..... Rochester
Rogers, S. F. ..... St. Paul
Rogne, W. G. ..... Spring Grove
Roholt, C. L. ..... Waverly
Roholt, H. B. ..... Fosston
Rohrer, C. A. ..... Waterville
Rokala, H. E. ..... Virginia
Rolig, D. H. ..... St. Paul
Rollins, T. G. ..... Elmore
Rome, H. P. ..... Rochester
†Rood, D. C. ..... Duluth
Rooke, E. D. ..... Minneapolis
Rose, J. T. ..... Lakefield
Rosendahl, F. G. ..... Minneapolis
Rosenfield, A. B. ..... Minneapolis
Rosenow, J. H. ..... Minneapolis
Rosenthal, F. H. ..... Austin
Rosenthal, Robert ..... St. Paul
Rosenwald, R. M. ..... Minneapolis
*Roskilly, G. C. P. ..... Minneapolis
Ross, A. J. ..... Minneapolis
Rossberg, R. A. ..... Morris
Rossen, R. X. ..... Hastings
Roth, F. D. ..... Lewiston
Roth, G. C. ..... St. Paul
Rotnem, O. M. ..... Mabel
Rothschild, H. J. ..... St. Paul
Roust, H. A. ..... Montevideo
Routley, E. F. ..... Rochester
‡Rovelstad, R. A. ..... Northfield
Rowe, C. J., Jr. ..... St. Paul
Rowe, O. W. ..... Duluth
Rowe, W. H. ..... Fairmont
Rowles, E. K. ..... Coleraine
Roy, P. C. ..... St. Paul
Rozycki, A. ..... Pine River
Rucker, C. W. ..... Rochester
Rucker, W. H. ..... Minneapolis
Rud, N. E. ..... Minneapolis
Rudell, G. L. ..... Minneapolis
Rudie, P. S. ..... Duluth
Ruff, C. C. ..... Rochester
Ruggles, G. M. ..... Forest Lake
†Ruhberg, G. N. ..... St. Paul
Rulison, E. T., Jr. ..... Rochester
Rumpf, C. W. ..... Faribault
†Rumpf, W. H. ..... Faribault
Runquist, J. M. ..... Duluth
Russ, H. H. ..... Blue Earth
Russeth, A. N. ..... Minneapolis
Rusten, E. M. ..... Minneapolis
Rutherford, W. C. ..... Nisswa
Rutledge, L. H. ..... Detroit Lakes
Ryan, J. D. ..... St. Paul
Ryan, J. J. ..... St. Paul
Ryan, J. M. ..... St. Paul
Ryan, M. E. ..... St. Paul
Ryan, W. J. ..... Duluth
Rydburg, W. C. ..... Brooter
Rydell, J. R. ..... Rochester
Ryding, V. T. ..... Howard Lake
Rydland, A. D. ..... Crookston
Rygh, H. N. ..... Atwater
Rynda, E. R. ..... New Prague
Rynearson, E. H. ..... Rochester
Sach-Rowitz, Alvan ..... Moose Lake
Sadler W. P., Jr. ..... Minneapolis
Saffert, C. A. ..... New Ulm
Sahr, W. G. C. ..... Hutchinson
St. Cyr, K. J. ..... Robbinsdale
Salassa, R. M. ..... Rochester
Salterman, B. I. ..... Minneapolis
Salter, R. A. ..... Virginia
Samuelson, L. G. ..... Mankato
Samuelson, Samuel ..... Minneapolis
Sandell, S. T. ..... Nonening
Sanderson, A. G. ..... Deerwood
†Sanderson, E. T. ..... Alexandria
Sandt, K. E. ..... Minneapolis
Sandven, N. O. ..... Paynesville
Sanford, A. H. ..... Rochester
Sanford, R. A. ..... Rochester
Sarff, O. E. ..... Duluth
Sargent, E. C. ..... Austin
Sarnecki, M. M. ..... St. Paul
Satersmoen, Theodore ..... Pelican Rapids
†Sather, Allen ..... Fosston
Sather, E. R. ..... Alexandria
Sather, G. A. ..... Fosston
Sather, R. N. ..... Mora

Sather, R. O. ..... Crookston
Satterlee, H. W. ..... Lewiston
Sauer, W. G. ..... Rochester
Savage F. J. ..... St. Paul
Sawatzky, W. A. ..... Minneapolis
Sax, M. H. ..... Duluth
Sax, S. G. ..... Duluth
Saxman, G. E. ..... Georgetown
Saylor, H. L. ..... Rochester
Sayre, G. P. ..... Rochester
Scandalis, P. R. ..... Rochester
Scanlon, R. L. ..... Rochester
Schaaf, F. H. K. ..... Minneapolis
Schade, F. L. ..... Worthington
Schaefer, J. F. ..... Owatonna
Schaefer, Samuel ..... Winona
Schaefer, W. G. ..... Minneapolis
Schamber, W. F. ..... Parkers Prairie
Schatz, F. J. ..... St. Cloud
Scheifley, C. H. ..... Rochester
†Scheldrup, N. H. ..... Minneapolis
Scherer, L. R. ..... Minneapolis
Scherling, S. S. ..... Minneapolis
Schiele, B. C. ..... Minneapolis
Schimelpfenig, G. T. ..... Chaska
Schirber, M. J. ..... Grand Rapids
Schlesselman, G. H. ..... Anoka
*Schlesselman, J. T. ..... Mankato
Schmidt, G. F. ..... Minneapolis
Schmidt, H. R. ..... Winona
Schmidt, H. W. ..... Rochester
Schmidt, J. R. ..... Mountain Lake
†Schmidt, Paul ..... Monroe, Ore.
Schmidt, P. G., Jr. ..... Granite Falls
Schmidt, R. F. ..... Alden
Schmidtke, R. L. ..... St. Paul
†Schmitt, S. C. ..... Los Angeles, Calif.
Schmitz, A. A. ..... Mankato
Schmitz, E. L. ..... Holdingford
Schneider, E. P. ..... Rochester
†Schneider, J. P. ..... Minneapolis
Schneider, L. E. ..... Duluth
Schneider, P. J. ..... Adams
Schneider, R. A. ..... Minneapolis
†Schneidman, N. R. ..... Minneapolis
Schoch, R. B. J. ..... St. Paul
Scholpp, O. W. ..... Hutchinson
Schons, Edward ..... St. Paul
Schottler, G. J. ..... Dexter
Schottler, M. E. ..... Minneapolis
Schroder, C. H. ..... Duluth
Schroeckenstein, H. F. ..... St. Paul
Schroeppel, J. E. ..... Winthrop
Schulberg, V. A. ..... Arlington
†Schuldt, F. C. ..... St. Paul
Schultz, J. A. ..... Albert Lea
Schultz, J. H. ..... Minneapolis
Schultz, P. J. ..... Minneapolis
Schulze, A. G. ..... St. Paul
Schulze, W. M. ..... Minneapolis
†Schussler, O. F. ..... Minneapolis
Schutz, E. S. ..... Mountain Lake
Schwartz, V. J. ..... Minneapolis
Schweiger, T. R. ..... Hibbing
Schweppe, J. S. ..... Rochester
†Schwyzer, Gustav ..... Minneapolis
Schwyzer, H. C. ..... St. Paul
†Scofield, C. L. ..... Benson
Scott, F. E. ..... St. Paul
†Scott, F. H. ..... Minneapolis
Scott, H. G. ..... Minneapolis
Scribner, B. H. ..... Rochester
Seaberg, J. A. ..... Minneapolis
Seale, Ruth A. ..... Rochester
†Seashore, Gilbert ..... Minneapolis
Seashore, R. T. ..... Duluth
Seery, T. M. ..... Austin
Seham, Max ..... Minneapolis
Seifert, M. H. ..... Excelsior
Seifert, O. J. ..... New Ulm
Seitz, S. B. ..... Barnesville
Sekhon, M. S. ..... St. Paul
Seldon, T. H. ..... Rochester
Selieskoor, S. R. ..... Minneapolis
Sellers, G. K. ..... Dassel
Selmo, J. D. ..... Norwood
Semsch, R. D. ..... Minneapolis
†Senkler, G. E. ..... St. Paul
Senn, E. W. ..... Owatonna
Sether, A. F. ..... Ruthton
Setzer, H. J. ..... St. Paul
Seybold, W. D. ..... Rochester
Shandorf, J. F. ..... Minneapolis
Shands, W. C. ..... Rochester
Shannon, W. R. ..... St. Paul
Shaperman, Eva P. ..... Minneapolis
Shapiro, M. J. ..... Minneapolis
Sharp, D. V. ..... Minneapolis
†Shaw, A. W. ..... Virginia
Shaw, H. A. ..... Minneapolis
Shea, A. W. ..... Minneapolis
Sheedy, C. L. ..... Austin
Sheehan, J. R. ..... St. Paul
Shellito, J. G. ..... Rochester
†Shellman, J. L. ..... Pacific Palisades, Calif.
Sheppard, C. G. ..... Hutchinson
Sher, D. A. ..... Virginia
Sher, Lewis ..... Minneapolis
†Sherman, A. G. ..... Minneapolis
Sherman, C. H. ..... Bayport
Sherman, C. L. ..... Luverne
Sherman, H. T. ..... Cambridge
Sherman, R. V. ..... Red Wing
Sherwood, G. E. ..... Kimball
Shick, R. M. ..... Rochester
Shimonek, S. W. ..... St. Paul
Short, C. A., Jr. ..... Rochester
Short, Jacob ..... St. Paul
Shronts, J. F. ..... Minneapolis
Shullenberger, C. C. ..... Rochester
Shragg, Harry ..... Elmore
Siegel, Clarence ..... St. Paul
Siegel, J. S. ..... Virginia
Siegmann, W. C. ..... Minneapolis
Silver, J. D. ..... Minneapolis
Simison, Carl ..... Barnesville
Simons, B. H. ..... Chaska
Simons, E. J. ..... Swanville
†Simons, J. H. ..... Minneapolis
Simons, L. T. ..... St. Paul
Simonson, D. B. ..... Minneapolis
Simonton, K. MacL. ..... Rochester
Simpson, E. DeW. ..... Minneapolis
Sinamark, Andrew ..... Hibbing
Singer, B. J. ..... St. Paul
Sinykin, M. B. ..... Minneapolis
Siperstein, D. M. ..... Minneapolis
Sisk, H. E. ..... St. Cloud
Sisler, C. E. ..... Grand Rapids
†Sivertsen, A. ..... Mound
Sivertsen, Ivar ..... Minneapolis
Sjoding, J. D. ..... Mankato
Sjostrom, L. E. ..... St. Peter
Skaug, H. M. ..... Chatfield
Skillern, P. G., Jr. ..... Rochester
†Skinner, H. O. ..... St. Paul
Skjold, A. C. ..... Minneapolis
Skogerboe, R. B. ..... Karlstad
Skroch, E. E. ..... Rochester
Slater, S. A. ..... Worthington
Sloan, W. P. ..... Rochester
Slocumb, C. H. ..... Rochester
Smisek, E. A. ..... St. Paul
Smisek, F. M. E. ..... Minneapolis
Smith, Adam M. ..... Minneapolis
Smith, Archie M. ..... Minneapolis
Smith, B. A. ..... Crosby
Smith, Baxter A., Jr. ..... Minneapolis
Smith, C. M. ..... Duluth
Smith, D. E. ..... Rochester
Smith, Don V. ..... Minneapolis
Smith, F. L. ..... Rochester
Smith, F. R. ..... Rochester
Smith, G. G. ..... Minneapolis
Smith, H. L. ..... Rochester
Smith, H. R. ..... Minneapolis
Smith, L. G. ..... Montevideo
Smith, L. A. ..... Rochester
†Smith, M. I. ..... Minneapolis
†Smith, M. W. ..... Red Wing
Smith, N. D. ..... Rochester
Smith, N. M. ..... Minneapolis
Smith, N. R. ..... Minneapolis
Smith, O. O., Jr. ..... Rochester
Smith, P. M. ..... Lake Crystal
Smith, P. L. ..... Rochester
Smith, R. C. ..... Holdingsford
Smith, V. D. E. ..... St. Paul
Smith, W. R. ..... Grand Marais
Smyth, J. J. ..... Lester Prairie
Snell, A. M. ..... Rochester
Snyder, C. D. ..... Kiester
Snyder, G. W. ..... St. Paul
Snyder, O. E. ..... Ely
Soderlind, R. T. ..... Minneapolis
Sogge, L. I. ..... Windom
Sohlberg, O. I. ..... St. Paul
†Sohmer, A. F. ..... Mankato
Solhaug, S. B. ..... Minneapolis
Solsem, F. N. S. ..... Spicer
Sommers, Ben ..... St. Paul
Sonnesyn, N. N. ..... Le Sueur
Sorem, M. B. ..... St. Paul
Sorum, F. T. ..... Tasner
Soucheray, P. H. ..... St. Paul
Soule, E. H. ..... Rochester
Souster, B. B. ..... St. Paul
Spang, A. I. ..... Duluth
Spang, I. S. ..... Duluth
Spano, J. P. ..... Minneapolis
Spaulding, C. A. ..... Rochester
Spear, R. C. ..... Rochester
Spence, B. J. ..... Rochester
Spencer, J. R. ..... Rochester
Spicer, F. W. ..... Duluth
Spink, W. W. ..... Minneapolis
Spock, B. M. ..... Rochester
Sprafka, J. M. ..... St. Paul
Sprague, R. G. ..... Rochester
Spratt, C. N. ..... Minneapolis
Spray, Paul ..... Rochester
*Spurbeck, R. G. ..... Cloquet
Spurzem, R. J. ..... Anoka
Stahr, A. C. ..... Hopkins
Stam, John ..... Worthington
Stanford, C. E. ..... Minneapolis
Stangl, P. E. ..... St. Cloud
Stanley, C. R. ..... Worthington
Starekow, M. D. ..... Thief River Falls
Stark, D. B. ..... Rochester
Stark, F. M. ..... Rochester
Starks, W. O. ..... Rochester
State, David ..... Minneapolis
Stauffer, M. H. ..... Rochester
Stayton, C. A. ..... Rochester
Steffens, L. A. ..... Red Wing
Stegmaier, O. C. ..... Rochester
Stein, K. E. ..... Lakeville
Stein, R. J. ..... Pierz
Steinberg, C. L. ..... St. Paul
Steiner, I. W. ..... Winona
Steiner, L. E. ..... Albert Lea
Stelter, L. A. ..... Minneapolis
Stemsrud, H. L. ..... Alexandria
Stennes, J. L. ..... Minneapolis
Stephan, E. L. ..... Hinckley
Sterner, E. G. ..... St. Paul
Sterner, E. R. ..... St. Paul
Sterner, J. J. ..... St. Paul
Sterner, O. W. ..... St. Paul
Stevens, J. E., Jr. ..... Rochester
Stevenson, B. M. ..... Fulda
Stewart, Alexander ..... St. Paul
Steward, R. I. ..... Minneapolis
Stickney, J. M. ..... Rochester
Stiegler, F. S. ..... Minneapolis
Stillwell, W. C. ..... Mankato
Stillwell, G. G. ..... Rochester
Stinson, J. C., Jr. ..... Rochester
Stoesser, A. V. ..... Minneapolis
Stolpestad, A. H. ..... St. Paul
Stolpestad, H. L. ..... St. Paul
†Stomel, Joseph ..... Los Angeles, Calif.
Stone, N. F. ..... Gonvick
Stone, S. P. ..... Minneapolis
Storrs, R. P. ..... Rochester
Storsteen, K. A. ..... Rochester
Stowe, H. R. ..... Rochester
†Strachauer, A. C. ..... Minneapolis
Stransky, T. W. ..... Owatonna
Strate, G. E. ..... St. Paul
Strathern, C. S. ..... St. Peter
Strathern, F. P. ..... St. Peter
Strathern, M. L. ..... Gilbert
Stratte, A. K. ..... Pine City
Stratte, H. C. ..... Windom
Straus, M. L. ..... St. Paul
Strauss, E. C. ..... Duluth
Street, Bernard ..... Northfield
Strem, E. L. ..... St. Paul
Strobel, W. G. ..... Duluth
Stroebel, C. F., Jr. ..... Rochester
Strom, G. W. ..... Minneapolis
Stromgren, D. T. ..... Minneapolis
Stromme, W. B. ..... Minneapolis
*Strout, G. E. ..... Minneapolis
Stuart, A. B. ..... Cloquet
Studer, D. J. ..... Faribault
Stuhr, J. W. ..... Stillwater
Sturley, R. F. ..... St. Paul
Sturre, I. R. ..... Minneapolis
Subby, Walter ..... Minneapolis
Sukov, Marvin ..... Minneapolis
Sullivan, R. M. ..... Minneapolis
Sundberg, Carol L. ..... Rochester
†Sutherland, C. G. ..... Rochester
Sutherland, H. N. ..... Ely
Sutton, H. R. ..... Hoffman
Svien, H. J. ..... Rochester
Swanson, I. A. ..... St. Paul
Swanson, R. F. ..... Minneapolis
†Swanson, V. F. ..... Minneapolis
Swedberg, W. A. ..... Duluth
Swedenburg, P. A. ..... Glenwood
Sweetser, H. B., Jr. ..... Minneapolis
†Sweetser, H. B., Sr. ..... Minneapolis
Sweetser, T. H. ..... Minneapolis
Sweitzer, S. E. ..... Minneapolis
†Swendseen, C. G. ..... Minneapolis
Swendson, J. J. ..... St. Paul
Swensen, R. G. ..... North Branch
Swenson, A. O. ..... Duluth
Swenson, O. J. ..... Waseca
Swezey, B. F. ..... Buffalo

Takaro, T. ..... Rochester
Tangen, G. M. ..... Minneapolis
Tanquist, E. J. ..... Alexandria
Tatum, D. E. ..... St. Paul
Taylor, A. B. ..... Rochester
Taylor, B. E. ..... Rochester
†Taylor, C. W. ..... Duluth
Taylor, E. R. ..... Rochester

Taylor, J. H.....Minneapolis
Teich, K. W. .....Duluth
Teisberg, C. B.....St. Paul
Teisberg, J. E. .....St. Paul
Teitgen, R. E.....Rochester
Telford, V. J.....Litchfield
Tenner, R. J.....Minneapolis
Terrell, B. J.....Nopeming
Tesch, G. H.....Elk River
Thabes, J. A.....Brainerd
Thabes, J. A., Jr.....Brainerd
Thayer, E. A. .....Fairmont
Thielen, R. D. .....St. Michael
Thiem, C. E.....St. Paul
Thom, J. G.....Rochester
Thomas, G. E.....Minneapolis
†Thomas, G. H. .....Minneapolis
Thompson, Arthur .....Cokato
Thompson, C. O.....Hendricks
Thompson, F. A.....St. Paul
Thompson, G. J.....Rochester
Thompson, H. B.....Fergus Falls
Thompson, W. H.....Minneapolis
Thomson, J. M. .....Minneapolis
Thoreson, M. C. Bernice..So. St. Paul
Thorson, S. V.....Minneapolis
Thysell, D. M.....Minneapolis
Thysell, F. A..... Moorhead
Thysell, V. D.....Hawley
Tibbetts, M. H.....Duluth
Tifft, C. R.....St. Paul
*Tilderquist, D. L.....Duluth
Tillisch, J. H.....Rochester
†Tingdale, A. C. .....Minneapolis
Tingdale, Carlyle.....Hibbing
Tinkham, R. G.....Minneapolis
Titrud, L. A. .....Minneapolis
Tobin, J. D.....Minneapolis
Tobin, J. R., Jr.....Rochester
Todd, R. L.....Minneapolis
Tompkins, S. F.....Rochester
Tondreau, R. L.....Rochester
†Torgerson, W. B. .....Oklee
Tosseland, N. E.....Duluth
Twomey, J. E.....Minneapolis
Trach, B. B.....Minneapolis
Tracht, R. R.....St. Paul
Traeger, C. A.....Faribault
Trandem, C. E.....Rochester
Travis, J. S. .....St. Paul
Traxler, J. F.....Henderson
Tregilgas, H. R.....So. St. Paul
Trommald, G. B. K.....Anoka
Troost, H. B.....Mankato
Trow, J. E.....Minneapolis
Trow, W. H.....Minneapolis
Troxil, Elizabeth.....Minneapolis
Trueman, H. S. .....Minneapolis
Truesdale, C. W.....Glencoe
Trutna, T. J.....Silver Lake
Tucker, W. B.....Minneapolis
Tudor, R. B.....Minneapolis
Tunstead, H. J.....Minneapolis
Tuohy, E. L.....Duluth
Turbak, C. E.....Herman
†Turnacliff, D. D.....St. Paul
Turnbull, T.....Rochester
†Tweedy, G. J. .....Winona
Tweedy, J. A.....Winona
Twiggs, Leo F.....Austin
Tyler, S. H. .....Raymond

Ude, W. H.....Minneapolis
Uhler, W. M.....Rochester
Uhley, C. G.....Crookston
Uihlein, Alfred.....Rochester
Ulrich, H. L.....Minneapolis
Underdahl, L. O.....Rochester
Undine, C. A.....Minneapolis
Upshaw, Betty Y.....Rochester
Upshaw, J. E.....Rochester
Urberg, S. E. .....Duluth

Vadheim, A. L.....Tyler
Vadheim, L. A.....Rochester
Valentine, W. H.....Tracy
Van Cleve, H. P., Jr. ..Dodge Center
Vandersluis, C. W.....Bemidji
Van Herik, Martin .....Rochester
Van Meier, Henry.....Stillwater
Van Patter, Ward.....Rochester
Van Ryzin, D. J.....Duluth
Van Valkenberg, J. D.....Floodwood
Varco, R. L.....St. Paul
Vaughan, V. M.....Truman
Vaughn, L. D.....Rochester
Veirs, D. M.....St. Paul
Veirs Ruby J. S.....St. Paul
Venables, A. E.....St. Paul
Veranth, L. A. .....St. Cloud
Vezina, J. C.....Mapleton
Vik, A. E.....Minneapolis
Vik, Melvin.....Onamia

Virnig, M. P.....Wells
Virnig, R. P.....Wells
Vogel, H. A. L.....New Ulm
Vollmer, F. J. .....Winona
Von der Weyer, W. H.....St. Paul
Vrtiska, F. L.....St. Cloud
Von Drasek, J.....Mankato

Waas, C. W.....St. Paul
Wadd, C. T.....Janesville
Wagener, H. P.....Rochester
Wagner, N. W.....Graceville
Wahlquist, H. F. .....Minneapolis
†Wakim, Khalil G. .....Rochester
Wakefield, E. G.....Rochester
*Walch, A. E.....Minneapolis
Walder, H. J.....Duluth
Waldron, C. W.. .....Minneapolis
Walfred, K. A.....St. Cloud
†Walker, A. E.....Duluth
Walker, A. E.....St. Paul
Walker, S. A.....Minneapolis
Wall, C. R.....Minneapolis
Wallace, M. O.....Duluth
Waller, J. D.....Pine City
Walsh, F. M. .....Minneapolis
Walsh, M. N.....Rochester
Walsh, W. T.....Minneapolis
Walter, C. W.....St. Paul
Walter, F. H.....International Falls
Walters, Waltman.....Rochester
Wandke, O. E.....Fairmont
Wang, J. C.....Minneapolis
Wangensteen, O. H. .....Minneapolis
Ward, L. E.....Rochester
Ward, P. A.....Minneapolis
†Ward, P. D.....St. Paul
Warner, J. J.....Perham
Warren, C. A.....St. Paul
Wasmund, C. W.....Red Wing
Wasson, L. F.....Alexandria
Watkins, C. H.....Rochester
Watkins, D. H.....Rochester
Watson, A. M.....Royalton
Watson, C. G.....Minneapolis
Watson, C. J.....Minneapolis
†Watson, J. D.....Minneapolis
Watson, J. R.....Rochester
Watson, P. T.....Minneapolis
Watson, R. E.....Minneapolis
Watson, P. T.....St. Paul
Watson, H. A. W.....Minneapolis
Watson, S. W.....Royalton
Watson, W. J.....Newport
Watts, W. E.....Rochester
Watz, C. E.....St. Paul
Waugh, J. M.....Rochester
Weaver, M. M.....Minneapolis
Weaver, P. H.....Faribault
Webb, E. A.....Minneapolis
Webb, J. H.....Rochester
Webb, R. C.....Minneapolis
Webber, F. L.....St. Paul
Weber, H. M.....Rochester
Weed, L. A.....Rochester
Weir, J. F.....Rochester
Weis, B. A.....St. Paul
Weisberg, Maurice.....St. Paul
Weisberg, R. J.....Minneapolis
Wellman, T. G.....Lake City
Wellman, W. E.....Rochester
Wellner, T. O.....Rochester
Wells, A. H.....Duluth
Wells, W. B.....Jackson
Wendland, J. P.....Minneapolis
Wenner, W. T.....St. Cloud
Wentworth, A. J. .....Mankato
Wenzel, G. P.....St. Paul
Wenzel, R. E.....Blue Earth
Werner, George .....Minneapolis
Werner, O. S.....Cambridge
†West, Catherine C. ....Minneapolis
West, Elmer J.....Faribault
Westby, Magnus.....Madison
Westby, Nels.....Madison
†Westerman, A. E.....Montgomery
Westerman, F. C.....Montgomery
‡Westphal, K. F.....Minneapolis
Westrup, J. E.....Lanesboro
Wethall, A. G.....Minneapolis
Wetherby, Macnider.....Minneapolis
Wetzel, E. V. .....Minneapolis
Weum, T. W.....Minneapolis
Wheeler, D. W.....Duluth
†Wheeler, M. W. .....Lake Elmo
†Whitacre, J. C.....St. Paul
White, A. A.....Minneapolis
White, N. K. .....Rochester
White, S. M.....Minneapolis
White, W. D.....Minneapolis
Whitesell, F. B., Jr. .....Rochester
Whitesell, L. A.....Minneapolis
Whitney, R. A.....Princeton

Whitson, S. A.....Albert Lea
Whittemore, D. D.....Bemidji
Widen, W. F.....Minneapolis
Wilcox, A. E.....Minneapolis
Wilcox, G. C.....St. Peter
†Wilder, K. W. .....Minneapolis
Wilder, R. L.....Minneapolis
Wilder, R. M.....Rochester
Wilder, R. M., Jr.....Minneapolis
Wilken, P. A.....Minneapolis
Wilkinson, Stella L. .....Faribault
Wilkowske, R. J.....Owatonna
Will, C. B.....Bertha
Will, W. W.....Bertha
†Willcutt, C. E.....Phoenix, Ariz.
Williams, A. B.....St. Paul
Williams, B. F. P.....Duluth
Williams, C. A.....Pipestone
Williams, C. K.....St. Paul
Williams, H. L., Jr.....Rochester
Williams, H. O.....Lake Crystal
Williams, J. A.....St. Paul
Williams, L. A.....Slayton
Williams, M. R.....Cannon Falls
†Williams, R. V.....Rushford
†Williams, Robert.....Carthage, Ill.
Williams, R. R., Jr.....Rochester
Williamson, H. A.....Lake Heron
Willius, F. A.....Rochester
Wilmer, H. A.....Rochester
Wilmot, C. A.....Litchfield
Wilmot, H. E.....Litchfield
Wilson, C. E.....Blue Earth
Wilson, F. C.....Austin
Wilson, G. T.....Rochester
Wilson, J. A.....St. Paul
Wilson, J. V.....St. Paul
Wilson, R. B. .....Rochester
Wilson, R. H.....Winona
Wilson, V. O.....Rochester
†Wilson, W. F.....Lake City
Winburn, J. R.....Rochester
Winchester, E. C.....Rochester
Winchester, W. W. .....Rochester
Wingquist, C. G.....Crosby
Winnick, J. B.....St. Paul
Winter, J. A. .....Duluth
Winther, Nora M. C.....Minneapolis
Wipperman, F. F.....Minneapolis
Wisness, O. A.....Slayton
Witham, C. A.....Minneapolis
*Withrow, M. E.....International Falls
Wittich, F. W.....Minneapolis
Wittrock, L. H. .....Watkins
Wohlrabe, A. A.....Minneapolis
Wohlrabe, C. F.....No. Mankato
Wohlrabe, E. J.....Springfield
Wold, K. C.....St. Paul
Wolf, A. H. .....Minneapolis
Wolff, Helen B.....Worthington
Wolff, H. J.....St. Paul
Wolkoff, H. J.....St. Paul
Wollaeger, E. E.....Rochester
Woltman, H. W.....Rochester
Wood, G. O.....Rochester
Wood, H. G.....Rochester
†Wood, R. A. .....Minneapolis
Woodard, D. E.....Rochester
Woolling, K. R.....Rochester
Woolner, L. B.....Rochester
Word, H. L.....St. Paul
Worden, R. E.....Rochester
Workman, W. G.....Tracy
Wright, R. R.....Austin
*Wright, S. G.....Minneapolis
Wright, W. S.....Minneapolis
Wyatt, O. S.....Minneapolis
Wynne, H. M. N.....Minneapolis

Yaeger, J. J.....Redwood Falls
Yaeger, W. W.....Marshall
Ylitale, W. H.....Hibbing
Ylvisaker, R. S.....Minneapolis
Yoerg, O. W.....Minneapolis
Young, H. H.....Rochester
Young, T. O.....Duluth
Younger, L. I.....Winona
Youngren, E. R.....St. Paul

Zachman, A. H.....Melrose
Zachman, L. L.....St. Paul
Zagaria, J. F.....Rochester
Zaworski, L. A.....Minneapolis
Zeigler, C. M.....Pequot Lakes
Zemke, E. E.....Fairmont
Zick, L. H.....Rochester
Zierold, A. A.....Minneapolis
Zimmermann, H. B. .....St. Paul
Zinter, F. A.....Minneapolis
Ziskin, Thomas.....Minneapolis
†Zlatovski, M. L.....Duluth
Zorn, E. L. .....Erskine

✦ Reports and Announcements ✦

INTERNATIONAL ACADEMY OF PROCTOLOGY

The first meeting of the newly formed International Academy of Proctology will be held at the Marlborough-Blenheim in Atlantic City, N. J., on Friday, June 10, 1949.

The scientific portion of the program will consist of the presentation of papers and motion picture films of interest to all physicians as well as to those specializing in Proctology.

Further information and a copy of the program may be obtained by writing to Dr. Alfred J. Cantor, International Academy of Proctology, 43-55 Kissena Blvd., Flushing, N. Y.

$250,000 GIVEN FOR RESEARCH BY AMERICAN HEART ASSOCIATION

Research awards totaling $250,000 have been allocated by the American Heart Association to twenty-six investigators and six medical schools and hospitals for studies in heart and circulatory disease, it was announced today by Mr. A. W. Robertson, Chairman, of the Board.

The awards include two to established investigators engaged in independent research, twenty-four research fellowships to younger scientists, six grants-in-aid to institutions, and provide additional funds for basic research and co-operative research studies. Selection of individuals and of projects to receive grants was made by the Research Committee of the American Heart Association's Scientific Council, of which Arlie R. Barnes, M.D., of Rochester, Minnesota, is Chairman. Louis N. Katz, M.D., Chicago, headed the research committee.

Policy considerations governing the allocations included the support of younger scientists in the medical research field to develop investigators in cardiovascular disease. To this end, $103,800 was allocated to 25 research fellowships, the individual stipends ranging from $3,000 to $4,000 to cover one-year periods beginning, in most cases, on July 1, 1949.

CONFERENCE OF PRESIDENTS AND OTHER OFFICERS OF STATE MEDICAL ASSOCIATIONS

This valuable conference of presidents and other officers of State Medical Associations will again be held the Sunday afternoon preceding the opening of the general session of the American Medical Association and will be open to all physicians. This year the meeting will be held Sunday afternoon, June 5, 1949, in the Rose Room of the Traymore Hotel in Atlantic City.

Among the speakers will be:

Cecil Palmer, English publisher, author and journalist, will tell of the impact of socialized medicine on the British doctor and his patients.

W. Allan Richardson, editor of *Medical Economics,* who is now in England, will present an American viewpoint of the British health system.

Edward H. O'Connor, managing director of the Insurance Economics Society of America, will discuss legislation relative to compulsory disability compensation programs now operating in three states.

Dr. Bert G. Thomas of California will speak on the medical implications of cash sickness compensation acts.

Dr. Clarence Northcutt, president of the Oklahoma State Medical Association, and *Dr. George F. Lull,* secretary of the AMA, will also address the conference on medical organizations.

NATIONAL CONFERENCE OF COUNTY MEDICAL SOCIETY OFFICERS

The fifth National Conference of County Medical Society Officers will be held in the morning and evening of Sunday, June 5, 1949, in the Rose Room of the Traymore Hotel, Atlantic City.

The morning program will include the presentation of emergency call plans with discussion. In the evening Mr. Clem Whitaker, Director of the AMA National Education Campaign, will speak, and Senator John L. McClellan of Arkansas will discuss health problems.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

The Minnesota Society of Neurology and Psychiatry met in Rochester on May 14 at St. Mary's Hospital for surgical clinics and later at the Medical Little Theater for a clinico-pathologic conference and the following addresses:

"Neurologic Evaluation of the Cutaneous Histamine Reaction." By Dr. I. S. Cooper.

"Intramedullary Cord Tumors." By Dr. H. W. Woltman and Dr. J. W. Kernohan.

"Preventive Psychiatry in the Rochester Child Health Institute." By Dr. B. M. Spock.

Dr. O. H. Beahrs entertained luncheon guests with prestidigitation.

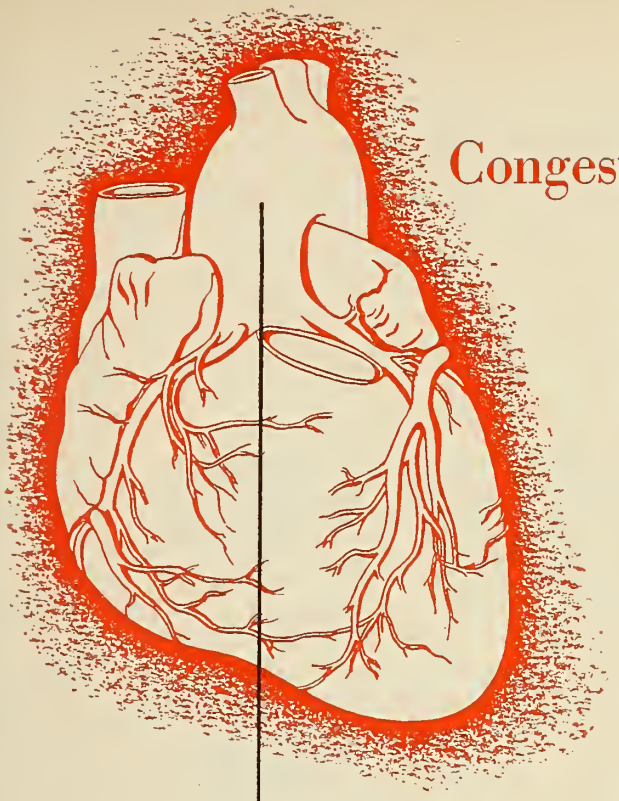
Dr. W. McK. Craig is president, and Dr. Royal C. Gray, secretary-treasurer of the Society.

E. T. BELL TO BE HONORED

On June 15, 1949, Dr. E. T. Bell, Professor of Pathology, reaches the age of retirement and will relinquish the chair. He has served the University since 1910, first teaching in Anatomy, and from 1911 until the present time in the Department of Pathology. He was appointed head of the department in 1921 and in this capacity has directed its activities in the intervening years. Everyone who has had any contact with medicine in the Northwest knows how profound his influence has been, not alone on teaching and research in pathology, but on the practice of medicine, as a whole.

Many physicians and former students have brought to the Minnesota Medical Foundation the request that

(Continued on Page 544)



Congestive Heart Failure...

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SEARLE

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—improves cardiac failure by effecting an improved heart action with increased blood flow, and eliminating edema fluids by the renal route.

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**Searle Aminophyllin contains at least 80% of anhydrous theophylline. G. D. Searle & Co., Chicago 80, Illinois.*

SEARLE RESEARCH IN THE SERVICE OF MEDICINE

1. Howarth, S.; McMichael, J., and Sharpey-Schafer, E. P.: The Circulatory Action of Theophylline Ethylene Diamine, Clin. Sc. 6:125 (July 17) 1947.

In Memoriam

THOMAS NELSON DUNCAN

Dr. T. N. Duncan, a practitioner at Bigfork, Minnesota, for nearly forty years, passed away March 16, 1949, at the age of seventy-one.

Thomas Nelson Duncan was born in Delavan, Illinois, September 14, 1877. He received his college education at Kansas State University and his M.D. degree from the St. Louis College of Medicine.

On July 25, 1908, Dr. Duncan was united in marriage to Inice Esson of Lawrence, Kansas. They were blessed with eleven children, nine of whom survive. Mrs. Duncan also is living.

Dr. Duncan was a pioneer of the Bigfork country for many years, having been the only doctor for miles around. He served his patients by horseback and boat in summer and by dog sled or on foot in the winter.

WILLIAM A. PLUMMER

Dr. William A. Plummer, sixty-five years old, a member of the staff of the Mayo Clinic for almost forty years, died of a heart attack at his home on March 22, 1949.

Dr. Plummer, younger brother of the late Dr. Henry Plummer, came to the Mayo Clinic in June, 1910, after his graduation from the Northwestern University Medical School.

A year later, on Aug. 29, 1911, he was married to Corena Popple, who survives him. On Feb. 1, 1917, Dr. Plummer became head of a section of medicine at the Clinic, a position he held until October, 1947, when he became a senior consultant in medicine.

He was an associate professor of medicine in the Mayo Foundation, graduate school of the University of Minnesota.

William A. Plummer was born at Racine, Wisconsin, June 30, 1883. Both his father and grandfather were physicians. His father, Dr. Albert Plummer, was well known in southeastern Minnesota.

Dr. Plummer entered Northwestern University after his graduation from Stewartville High School.

During his career he was the author of approximately forty papers in medical journals. In 1937 he was specified as a specialist in internal medicine by the American Board of Internal Medicine. His specialty was diseases of the thyroid gland.

Dr. Plummer was a fellow in both the American Medical Association and the American College of Physicians.

Other scientific groups he belonged to were the Minnesota Society of Internal Medicine, Southern Minnesota Medical Association, American Goiter Association, Central Society for Clinical Research, Alumni Association of Mayo Foundation, Association for the Study of Internal Secretions, Central Interurban Clinical club, Minnesota State Medical Association, Olmsted-Houston-Fillmore Dodge County Medical Society and Sigma Xi.

Until recently, Dr. Plummer owned a farm, where he spent much of his time.

Besides his wife, one daughter, Mrs. Blair Stark of Heywood, Calif., and two sons, John Henry Plummer of Pomona, N. Y., and William Plummer of Hollywood, Calif., survive him.

REPORTS AND ANNOUNCEMENTS

E. T. BELL TO BE HONORED

(Continued from Page 542)

a fund be established in Dr. Bell's honor, to perpetuate in some measure his influence as a teacher, investigator, and consultant.

As a result of these requests, an advisory committee was appointed and has recommended the establishment of a fund of $100,000 to create and maintain for teaching and research a Museum of Pathology in the Medical School, which will bear his name.

The Sponsoring Committee feels confident that there will be a gratifying response to requests to his many friends and admirers for subscriptions to this fund. It has been suggested that contributions might range from $100 to $1,000 or higher in individual instances.

This is a splendid opportunity to promote teaching and research in pathology and to honor a great leader in medicine.

It should be added that as a special project of the Greater University Fund any donor to the E. T. Bell Fund of the Minnesota Medical Foundation will also be listed and recognized as a donor to the Greater University Fund, even though his gift is entirely to the Bell Fund.

Dr. James McCartney is chairman of the E. T. Bell Fund Committee. Appropriate forms will be furnished by the Minnesota Medical Foundation, 132 Medical Sciences Building, University Campus, Minneapolis, to physicians and other friends of Dr. Bell for use in supporting the E. T. Bell Fund.

WASHINGTON COUNTY SOCIETY

The Washington County Medical Society held its regular monthly meeting in Stillwater on April 12. Guest speaker at the meeting was Dr. Richard L. Varco, associate professor of surgery at the University of Minnesota Medical School, who presented a talk on "Cancer of the Lung," illustrating his discussion with lantern slides.

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Woman's Auxiliary

WORLD MEDICS FIND GENERAL AGREEMENT

Mrs. H. F. Wahlquist

The World Medical Association, including representatives of forty nations, finds languages about the only block to complete agreement, according to Dr. Louis Bauer, vice chairman of the AMA Board of Trustees and secretary-general of the World Medical Association.

Dr. Bauer, addressing a recent meeting of the National Medical Auxiliary, noted the "surprising unanimity" which characterizes meetings of the WMA. Several significant actions were taken at the September, 1948, meeting of the organization, in Geneva, among them the revision of the Hippocratic Oath to read:

"Now being admitted to the profession of medicine, I solemnly pledge to consecrate my life to the service of humanity. I will give respect and gratitude to my deserving teachers. I will practice medicine with conscience and dignity. The health and life of my patient will be my first consideration. I will hold in confidence all that my patient confides in me. I will maintain the honor and the noble traditions of the medical profession. My colleagues will be my brothers. I will not permit considerations of race, religion, nationality, party politics or social standing to intervene between my duty and my patient. I will maintain the utmost respect for human life from the time of its conception. Even under threat I will not use my knowledge contrary to the laws of humanity. These promises I make freely and upon my honor."

At present German doctors are not considered in good standing because they have not decried the action of their associates. Not until they take action to punish those physicians responsible for war crimes will they be accepted in the World Medical Association. The Czechoslovakian delegation was compelled to withdraw because of the abolishment of its medical association by the communistic government (each country's medical association has two delegates).

Delegates found common ground in their distaste for socialized medicine, Dr. Bauer pointed out. Those who represented countries where socialized medicine is in effect wanted to do everything in their power to keep the situation from becoming worse.

The objectives of the WMA are well defined: first, it acts as a liaison for doctors and medical associations the world over, and is useful in disseminating information; it helps to promote peace, by furthering international relationships; and, of prime importance is the association's attempt to raise the standards of medicine and the health of the people of the world.

Dr. Bauer urged the Auxiliary members to interest physicians and lay persons in becoming members of a committee, which has been formed in the United States, to raise funds for the WMA. For information, they were referred to: World Medical Association, 2 East 103rd street, New York, 29, New York.

AUXILIARY AIDS CANCER HOME

Mrs. Charles W. Waas

Among the cancer aid activities of the Auxiliary to the Minnesota State Medical Association is helping with funds and dressings, for the Lady of Good Counsel Cancer Home in Saint Paul.

Opened in Saint Paul, in 1941, on the corner of St. Anthony and Cleveland avenues, the hospital is one of six of its kind in the United States. The first was started in New York City in 1896 by Rose Hawthorne Lathrop, daughter of the distinguished American novelist, Nathaniel Hawthorne. Mrs. Lathrop devoted her life to easing the suffering of incurable cancer victims who were living in New York slums.

The work grew and Mrs. Lathrop and the women who became associated with her banded together, under the name of Servants of Relief, as Sisters of the Third Order of St. Dominic for the exclusive care of indigent patients incurably ill of cancer. Since that time, contributions from sympathetic persons throughout the United States have enabled the Sisters to operate hospitals in six cities.

The Saint Paul hospital has 100 beds, with four large wards. At present there are nearly fifty patients in the hospital, with an almost even ratio of men and women, ranging from childhood to old age. Persons of all religious denominations are accepted.

A registered nurse is in constant attendance and practical nurses assist. A local physician is in charge, patients receiving a maximum of care and comfort.

It is a rule of the Servants of Relief that no pay is accepted from patients, their relatives or friends; nor has state and city aid ever been accepted. This work is supported entirely through the generosity of the public

WASECA GROUP TO BUY HOSPITAL EQUIPMENT

Mrs. George H. Olds

The Waseca Auxiliary is collecting extra dues to buy equipment for the hospital in Waseca. An additional hospital project was sewing and mending but that work has since been assumed by individual volunteers in Waseca.

This Auxiliary has 100 per cent membership of Waseca county doctors' wives and two meetings are held each year, one in January and one in May.

EDUCATION FOR HANDICAPPED: PROJECT

Mrs. B. Marden Black

An educational program to aid handicapped patients undergoing long treatment at hospitals has been organized by the Olmsted-Houston-Fillmore-Dodge County Auxiliary. The program includes tutoring for children, to enable them to keep up with their school work, and vocational instruction for adults, helping them

(Continued on Page 548)

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EDUCATION FOR HANDICAPPED

(Continued from Page 546)

to prepare for occupations that are within their physical capacities. The assistance is available to resident or non-resident patients.

Like many other Auxiliaries, the OHFD is making cancer dressings—distributed to the indigent of four counties. Members meet every Friday afternoon at the home of Mrs. F. P. Moersch to carry on this project.

Most current activity of the Auxiliary is the Health Day program, being presented May 11, in conjunction with the Federated Women's Clubs of the four counties. A lecture of diseases of the heart and their complications will keynote the event.

MOWER COUNTY WINS ANNUAL HYGEIA AWARD

Mrs. Chester Sheedy

The Mower County Auxiliary, through the efforts of Mrs. Tracy Barber, placed third in Group I of the annual *Hygeia* subscription contest this year. The Auxiliary received a cash prize of $15.

Although the contest is over, Auxiliary women are urged to continue promoting *Hygeia,* keeping the public correctly informed by means of the best laymen's health magazine.

WRIGHT COUNTY PLANS NEW HOSPITAL

Members of the Wright County Auxiliary are looking forward to the construction of a new hospital before the end of the year and are making plans for an accelerated program of hospital-correlated activities.

During the year the Wright county group has held meetings at which Health Days, Blue Cross and Blue Shield and medical subjects were discussed.

STATE PRESIDENT TO ADDRESS WEST CENTRAL

Mrs. F. W. Behmler

Mrs. Harold F. Wahlquist, state Auxiliary president, will address the next scheduled meeting of the West Central Woman's Auxiliary.

The Auxiliary, which includes four counties—Stevens, Pope, Big Stone and Traverse, now has twenty-four members and holds four meetings each year, two in the fall and two in the spring.

UPPER MISSISSIPPI LEADS HOSPITAL AID

Mrs. I. L. Mitby

Little Falls doctors' wives have organized a group to aid the hospital there and, finding many other women eager to help, accepted them in the group. The members meet once a month in the hospital and have, thus far, contributed a sewing machine and dishes to the hospital, made stuffed animals for the pediatrics department, and now are completing arrangements for buying a sterilizer for the hospital. Money is raised by holding silver teas and other benefit events, including a "Calico Ball."

The Upper Mississippi group noted with pride that this year one of the members, Mrs. John Thabes, Sr., of Brainerd, is serving as president of the Minnesota Public Health Association. She is the first woman president in forty-three years.

FIRST HEALTH DAY IN RAMSEY COUNTY, APRIL 21

Mrs. W. G. Johanson

Initiated by the Women's Auxiliary to the Ramsey County Medical Society and co-sponsored by the Saint Paul Area Public Health Council, the first Saint Paul and Ramsey County Health Day was held April 21. The all-day program was held in the Saint Paul Auditorium, which was granted without charge by the City Council.

Each major session, beginning at 9 a.m., 1 p.m., and 7:30 p.m., opened with the showing of motion pictures, selected by a visual education committee of experts from Canadian and American sources. Professional equipment and operator were underwritten by twenty-two service clubs of the city.

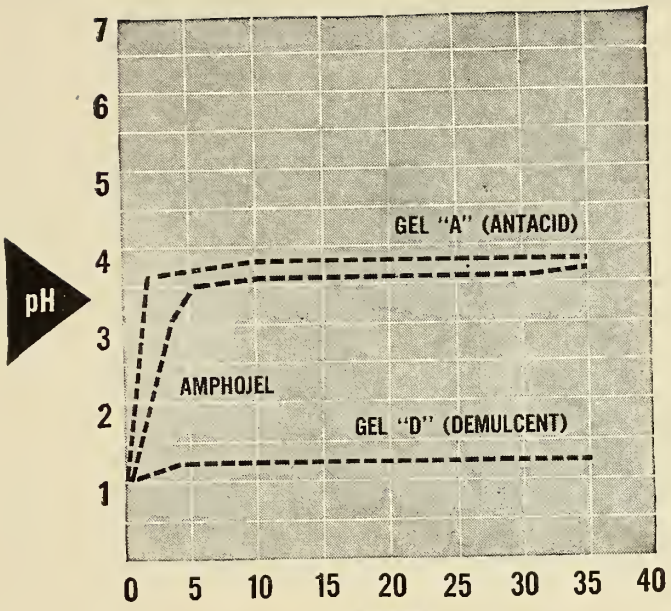
The morning program featured three speakers, in addition to a greeting by the mayor of the city. They were: Dr. Robert N. Barr, who spoke on "Let's Live Longer," Miss Irene Netz, nutritionist, "You Are What You Eat"; and Dr. Walter C. Alvarez of Mayo Clinic, who drew the largest audience of the day with, "What Makes Women Nervous."

The afternoon was devoted to child health problems. Dr. Paul H. Dwan spoke on "Basic Child Health Needs," after which a panel of experts held a discussion on "The Whole Child." It was moderated by Judge Carlton F. McNally, and included Dr. Edward Dyer Anderson, child psychiatrist; Dr. Dwan; Selmer H. Berg, public school superintendent; and Miss Agnes A. Larson, nutritionist and home economist. The Parent-Teacher groups of the city particularly promoted this session, substituting this program for their own annual program on health at monthly Council meetings.

The evening session featured Dr. Thurman B. Rice, of Indianapolis, widely known public health administrator and professor in the Indiana Medical Center. His informal message on "How to Live Better," held the audience from the beginning, with alternate laughter and surprise at his unexpected advice "to enjoy yourself and have fun."

The Central High School choir of seventy sang during the morning, the Bethesda Hospital nurses in uniform at the afternoon, and the Johnson High School band of fifty-five played on the evening program. One hundred and twenty-five ushers from volunteer women's service groups, such as Red Cross Motor Corps, nutrition classes, first aid and Grey Ladies, were on duty in the morning; graduate nurses from Saint Paul hospitals, in the afternoon; and high achievement winners in health projects and citizenship from youth organizations, in the evening.

More than forty exhibits, demonstrations and displays were arranged in a special room, giving free of charge almost 200 free chest x-rays, vision and audiometer tests to show the program carried on in the schools, and free literature.



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Of General Interest

March 25 was "De Boer Day" in Edgerton. Residents of the community gathered in the high school auditorium that evening to pay tribute to the city's pioneer physician, Dr. Hermanus De Boer, and to thank him for his forty-three years of service.

Since 1906, when Dr. De Boer began his medical practice in Edgerton, he has served as mayor of the city for twenty-two years and as its physician for forty years. He retired from active practice in 1946.

* * *

With ninety-eight years of community service behind them, Dr. Myron W. Smith and his wife, Dr. Grace Gardiner Smith, celebrated the fiftieth anniversary of their arrival in Red Wing on March 16.

In 1899 the two physicians arrived in Red Wing and opened medical offices. Dr. Myron Smith is still conducting an active practice. Dr. Grace Smith retired in 1947. During their half century of medical service, both physicians have been prominent in numerous civic activities and projects.

* * *

Three Rochester physicians, working in the Mayo Foundation, received master of science degrees at the University of Minnesota commencement exercises on March 17. The physicians and the fields in which they received their degrees are Dr. J. O. Gooch, otolaryngology and rhinology; Dr. W. G. McCreight, dermatology and syphilology, and Dr. N. K. White, medicine.

* * *

Guest speaker at a meeting of the David Wisted American Legion auxiliary in Duluth on March 21 was Dr. William Coventry, whose talk was entitled "Your Doctor Serves You."

* * *

Dr. W. R. Humphrey, Stillwater, recently flew to Virginia to be with his brother who had to undergo a major operation. After flying back, he was in an automobile accident on the way from the airport to Stillwater. Although the car was damaged, Dr. Humphrey fortunately was not injured.

* * *

The Food and Drug Administration is making seizures of syrup of urethane, a cough syrup manufactured by Marvin R. Thompson, Inc., Stamford, Connecticut. More than 2,300 gallons of the syrup have been distributed to physicians and druggists. When the syrup is administered as directed on the label, there is danger of the development of leukopenia. Physicians and druggists have therefore been warned.

* * *

Beginning in 1952, the minimum requirements for eligibility to examination for the American Board of Orthopaedic Surgery, Part I, will be the completion of an internship, a year of resident training in general surgery, and two years of resident training in orthopedic surgery on an approved service.

The AMA, in co-operation with the U. S. Office of Education, is making a study of school health services through its Bureau of Health Education. The survey is a preliminary step in efforts designed to bring about improvement of school health programs within the framework of the private practice of medicine. The secretaries of each local medical society will soon receive a questionnaire which they are urged to complete and return. The U. S. Office of Education in Washington will concurrently query the schools with a different questionnaire. The information obtained should bring out strengths and weaknesses in school services and indicate needs for future action.

* * *

Dr. William C. MacCarty, emeritus consulting physician of the Mayo Clinic and emeritus professor of the Mayo Foundation, was a voting delegate at a United Nations meeting in Brussels, Belgium, April 4 through 8. The meeting was a conference of the United Nations Educational, Scientific and Cultural Organization.

* * *

Dr. Karl C. Wold, Saint Paul, whose book, "Mr. President, How Is Your Health?" was recently issued by the Bruce Publishing Company of Saint Paul, was the guest speaker at a meeting of the Exchange Club in the Hotel Saint Paul on March 23. Dr. Wold's book was the cause of a recent national controversy concerning the state of Franklin Roosevelt's health during the last years of his life.

* * *

At a meeting of the Twin City Organized Reserve Medical Units, held at Fort Snelling on March 21, Dr. Daniel J. Moos, Minneapolis, spoke on "Reconstructive Surgery."

* * *

The Kandiyohi County Citizens' Mental Health Committee, at a meeting in Willmar on March 15, heard an address by Dr. Stanley B. Lindley, director of the Willmar State Hospital. On March 23, Dr. Lindley was guest speaker at the final meeting of a family relationship course conducted in Willmar. At that meeting he discussed personality development and mental hygiene.

* * *

Dr. A. C. Peterson was the guest of honor at an "appreciation day" party in Dassel on March 27. Residents of Dassel and the surrounding rural area gathered in the First Lutheran church that afternoon to pay tribute to Dr. Peterson for his forty-five years of medical service to the community.

After receiving his medical degree in 1903, Dr. Peterson practiced for a year at Shevlin and for another year at Murdock. Early in 1905 he moved to Dassel, where he has since practiced. During the past year he has been forced to curtail his practice because of ill health.

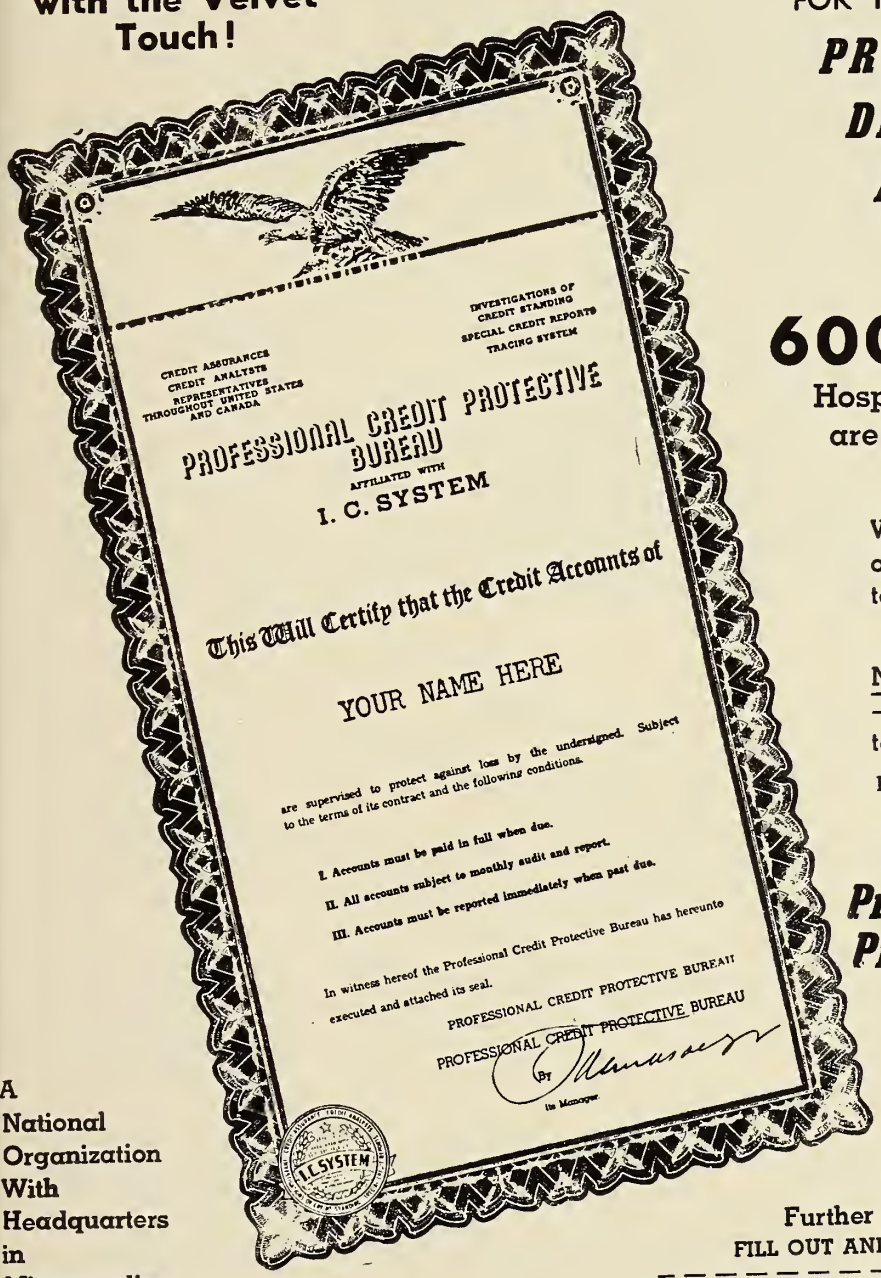
(Continued on Page 552)

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(Continued from Page 550)

Among Minnesota physicians attending a continuation course in physical medicine at the University of Minnesota on March 28, 29 and 30 was Dr. R. H. Puumala of Cloquet.

* * *

Speaking at a meeting of the Rotary Club in Hibbing on March 31, Dr. Clarence Jacobson, Chisholm, denounced the government health program and said that socialized medicine "has failed in every country that has tried it." He pointed out flaws in the plan and described the unsatisfactory situation in England under government-controlled medicine.

* * *

Among those taking part in the discussions at a continuation course in pediatrics at the University of Minnesota, April 7 through 9, was Dr. Karl H. Pfeutze, superintendent of the Mineral Springs Sanatorium at Cannon Falls.

* * *

In April, Dr. E. H. Frost of Willmar began his fiftieth year of medical practice in Kandiyohi County. To mark the occasion, a surprise program was presented by Rice Hospital staff members at their regular meeting. Talks honoring Dr. Frost's record of service were given by Dr. R. J. Hodapp, Dr. J. C. Jacobs, Dr. B. J. Branton and Dr. R. E. Anderson, all of Willmar, and Dr. Hans Johnson of Kerkhoven.

* * *

Dr. A. O. Swenson, Duluth, presented a talk on "Socialized Medicine" at a meeting of the Arrowhead Society of Medical Technologists in Duluth on March 31.

* * *

At a regional meeting of the National Association of Chiropodists in Omaha, Nebraska, April 9 through 11, Dr. Walter F. Kvale, Rochester, presented a paper entitled, "Occlusive Arterial Diseases and Their Relation to Chiropody."

* * *

Dr. B. J. Branton, Willmar, was elected a member of the state board of the Minnesota Trunk Highway Federation at its foundation meeting in St. Cloud late in March.

* * *

The Minneapolis Children's Heart Clinic moved to a new location on April 8. After twenty-seven years in the former Lymanhurst Hospital, now the Elizabeth Kenny Institute, the clinic is now being conducted at the outpatient department of the University of Minnesota Hospitals. Under the direction of Dr. M. J. Shapiro, head of the clinic since its formation in 1922, the clinic is open on Tuesday and Thursday afternoons.

* * *

At the annual convention of the Pacific Coast Oto-ophthalmological Society, held in Coronado, California, on April 6, Dr. Robert E. Priest, of the University of Minnesota, discussed the use of tracheotomy in the treatment of persons suffering from bulbar poliomyelitis.

* * *

Dr. Owen H. Wangensteen, chief of surgery at the University of Minnesota, left for Puerto Rico on April 5 to take part in a conference of the Puerto Rico Medical Association.

* * *

New methods in combatting cancer were described by Dr. F. H. Baumgartner, Albany, at a meeting of the Albany Community Club on April 7. Two motion pictures on cancer were shown at the meeting.

* * *

Dr. and Mrs. John S. Lundy left Rochester on March 26 for a month of traveling. They planned to spend the first two weeks touring the eastern states, with Dr. Lundy attending several medical meetings en route. The last two weeks of the trip were reserved for a vacation in Cuba.

* * *

A talk by Dr. F. H. Magney, Duluth, on the detection of cancer was a feature of the program for the April 5 meeting of the Duluth Associated Pharmacists.

* * *

A meeting was held in Coleraine on March 31 to organize committees to prepare for a mass chest x-ray survey in Itasca County. The x-ray survey, the first to be done in that county, is under the sponsorship of the Minnesota Department of Health, the Itasca County Medical Society and the Lake Julia Sanatorium.

* * *

Dr. Ralph Rossen, superintendent of the Hastings State Hospital, led a discussion on personnel problems at a mental hospital institute held in Philadelphia, April 11 to 15, sponsored by the American Psychiatric Association.

* * *

At a joint meeting of the Range Medical Association and its auxiliary in Hibbing on March 22, Dr. F. J. Elias of Duluth presented a talk on "The Evils of Socialized Medicine."

* * *

Contagious diseases in children were discussed by Dr. S. W. Watson, Royalton health officer, at a meeting of the Parent-Teacher Association in Royalton on March 14. In his talk Dr. Watson described the public health laws in regard to contagious diseases.

* * *

A Saint Paul and Ramsey County Health Day was held in the Saint Paul Auditorium on April 21, with motion pictures, exhibits and talks presented to the public throughout the day. Dr. Walter C. Alvarez, Rochester, opened the day's program with a talk on "What Makes Women Nervous?" The principal speaker in the afternoon was Dr. Paul F. Dwan, University of Minnesota pediatrician and research specialist in rheumatic fever.

* * *

The bi-annual Rice County chest clinic was held in Faribault on April 4 under the direction of Dr. Karl H. Pfuetze, superintendent of Mineral Springs Sanatorium. Free Mantoux tests were available to the public.

(Continued on Page 544)

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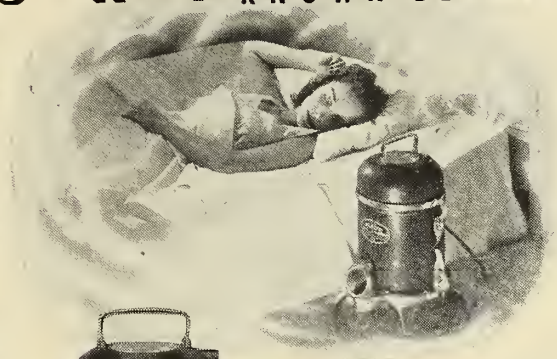
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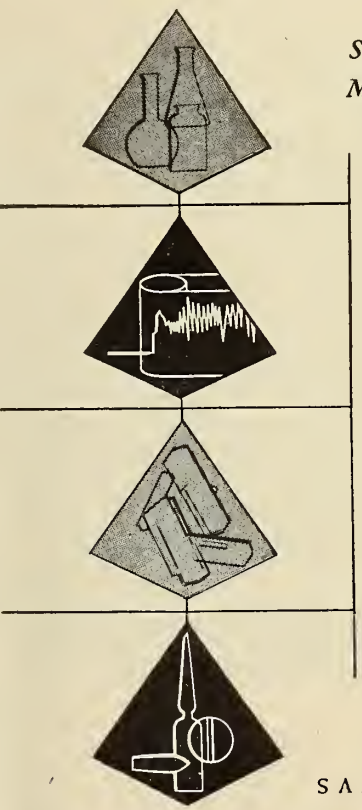
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(Continued from Page 552)

Dr. James A. Cosgriff was appointed health officer of Olivia at a meeting of the village council late in March.

* * *

Dr. William Austin, after completing postgraduate work at the University of Minnesota, began practice in Paynesville early in April. Dr. Austin formerly operated a thirty-bed hospital in Saskatoon, Saskatchewan, Canada.

* * *

Plans were announced late in March to construct a one-story clinic building in Litchfield, to house the offices of Dr. H. E. Wilmot, Dr. C. A. Wilmot and Dr. D. E. Dille. It was expected that the building would be completed within six months.

* * *

The life insurance companies of the United States and Canada, through the Life Insurance Medical Research Fund, will contribute $680,000 during 1949 for the support of heart disease research. From the fund, $585,300 will be used as grants-in-aid by thirty-five universities and research centers for the support of fifty-three research projects being carried on by individuals or by groups of investigators. In addition, $94,700 has been allocated for the support of eighteen graduate and nine undergraduate research fellows in the field of heart disease. Dr. Karl W. Anderson, medical director of the Northwestern National Life Insurance Company of Minneapolis, is a newly appointed director of the fund.

Dramamine for Seasickness. According to a recent release of the U. S. Army, a new drug, a member of the chemical family of benadryl and pyribenzamine, known as Dramamine, has been found to produce startling results in the prevention or cure of seasickness.

Credit for the original research is given Dr. Leslie N. Gay of the Protein Clinic of Johns Hopkins Hospital, who first began research on the drug in 1947.

In experiments conducted on army transports, there was only a 2 per cent failure if the drug was given before and during a voyage and only a 3 per cent failure in relieving those already suffering from seasickness. A dose of 100 mg. on sailing, repeated in six hours and administered thereafter before meals and on retiring, was effective. In using the drug after the onset of seasickness, rectal administration was sometimes necessary, and it proved effective. No untoward effects from the drug were experienced.

The drug should prove effective in travel by plane.

* * *

Physicians are warned against authorizing prescriptions for veterans before being authorized to treat the veteran. The Veterans Bureau reimburses the pharmacy for prescriptions filled for veterans on a physician's authorization. The Veterans Bureau will be constrained to collect from the physician the cost of such falsely authorized prescriptions. Being designated a participating physician in the program does not constitute an authorization for treatment. Authorizations for treatment must be obtained in each case.



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Dr. W. R. Miller returned to Red Wing on April 4 after attending a five-day convention of the American College of Physicians in New York.

* * *

Dr. and Mrs. C. G. Uhley, Crookston, were in Minneapolis on April 9, where Dr. Uhley attended a meeting of the board of directors of the Minnesota Cancer Society.

* * *

It was announced on April 6 that Dr. D. W. Kohler had been named chairman of the cancer drive in St. Joseph.

* * *

In St. Cloud, Dr. L. M. Evans has been appointed chairman of the St. Cloud Chamber of Commerce Committee on Public Health. Other officers of the committee are Dr. L. A. Veranth, vice chairman, and Dr. E. V. Wetzel, secretary. The committee develops and encourages citywide activities and procedures that create better living standards.

* * *

Balaton lost its only physician late in March when Dr. Lloyd A. Smith left for Tyler to become associated in practice with Dr. A. L. Vadheim and Dr. P. C. Johnson.

* * *

Dr. Grant J. Griebe, formerly of Great Falls, Montana, became associated in practice with Dr. Joseph Selmo in Norwood on April 1. A graduate of the Northwestern University Medical School, Dr. Griebe has been located in Great Falls for the past three years. Dr. Selmo and Dr. Griebe hope to establish a Norwood Clinic in the near future.

* * *

Dr. Donald M. Houston, Park Rapids, announced on March 31 that in April Dr. G. V. H. Kleifgen, of Jamestown, North Dakota, would become associated with him in practice in Park Rapids.

A graduate of the University of Minnesota Medical School in 1944, Dr. Kleifgen interned at General Hospital in Minneapolis and then completed a three-year fellowship in surgery at the Mayo Clinic. In Jamestown he served as a consulting surgeon at the Jamestown Clinic.

* * *

On April 4, Dr. Charles F. Brigham, Jr., announced his association with the St. Cloud Clinic. He is limiting his practice to general surgery.

* * *

Dr. B. J. Hughes, after practicing in Rolla, North Dakota, for ten years, recently moved to Minneapolis to begin a three-year residency in general surgery at the Veterans Hospital. A former resident of Virginia, Dr. Hughes is a graduate of the University of Minnesota Medical School. He interned at St. Luke's Hospital, Duluth, and in 1939 he began practice in Rolla.

* * *

Dr. Reuben A. Johnson has been elected president of the newly organized Minneapolis Society of Internal Medicine. Other officers of the society are Dr. Reuben

Berman, vice president; Dr. George N. Aagaard, secretary; Dr. Russell M. Wilder, recorder, and Dr. Harold E. Miller, treasurer.

* * *

Among members of a Nurses Advisory Committee for Carver County, which was formed at a meeting in Waconia on March 15, are Dr. James W. Bratholdt, Watertown, and Dr. M. B. Hebeisen, Chaska. At the organizational meeting, Dr. Bratholdt was elected vice chairman of the committee.

* * *

Guest speaker at the tenth annual dinner meeting of the Duluth Mental Hygiene Clinic on March 29 was Dr. Donald W. Hastings, head of the department of psychiatry and neurology at the University of Minnesota. Dr. Hastings spoke on "What Psychiatry Is."

* * *

Dr. Mark B. Coventry, Rochester, participated in a symposium on cancer at a sectional meeting of the American College of Surgeons in Butte, Montana, on April 5.

* * *

One of the principal speakers at the Fillmore County Safety Institute, held in Rochester on March 22, was Dr. Henry H. Young of the Mayo Clinic staff. Dr. Young presented an illustrated talk on farm safety.

* * *

Late in March it was announced that Dr. Richard A. Whitney had reopened his office in Cambridge, having decided to continue his practice there rather than move to Princeton as previously planned.

* * *

In Le Roy, Dr. M. P. Morse moved into a suite of offices in his newly completed building on March 12. His new offices consist of a reception room, nurse's room, examination room, recovery room, drug room and an x-ray laboratory.

* * *

The Chisago Lakes Clinic purchased the practice of Dr. John A. O'Hanlon in Lindstrom on March 9. Dr. O'Hanlon has moved to Minneapolis and opened a new practice at 738 East Seventh Street.

* * *

It was announced on March 17 that Dr. Edward P. Engels, formerly of Rochester, had opened a general medical practice in Spring Valley. A graduate of the University of Minnesota Medical School in 1948, Dr. Engels served his internship at Indianapolis General Hospital.

* * *

One of the speakers at a continuation course at the University of Minnesota on March 28 was Dr. Donald J. Erickson, Rochester, who spoke on "Shortwave and Microwave Therapy."

* * *

Dr. Martin R. Henry of the St. Peter State Hospital was the guest speaker at a meeting of the Monday

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Club in Le Sueur on March 21. Dr. Henry described the methods of treatment used at the hospital in the care of the mentally ill.

* * *

Dr. Edward H. Juers and Dr. George C. Kimmel, Red Wing, aided in conducting a crippled children's clinic in St. Cloud during the middle of March.

* * *

It was announced on March 16 that a new clinic had been opened in Glenwood by Dr. Edward M. Elsey of that city.

* * *

A report presented to the Hennepin County Tuberculosis Association on April 9 recommended that a panel of three physicians be hired to speed up disposition of 2,661 possible tuberculosis cases found in the Minneapolis x-ray survey two years ago. The recommendation was made by Dr. David Reisner, director of the tuberculosis control division for the Denver Bureau of Health and Hospitals, who was called to Minneapolis to study the situation and suggest what work remained to be done. It was estimated that a review of the 2,661 cases still awaiting diagnostic evaluation and disposition would require three or four months of work by a panel of three physicians and seven nurses.

* * *

At a meeting of the Mankato Council of Parents and Teachers on March 21, Dr. Arthur H. Langhoff, Mankato, discussed the Minnesota mental health program, pointing out the need for more attendants, more buildings and more modern equipment. He said that 90 per cent of the nurses and attendants at state hospitals haven't had the proper training for psychiatric treatment. Dr. Langhoff is a former member of the staff of the St. Peter State Hospital.

* * *

Among the speakers at a meeting in Winona on March 28 to review the city's public health services were Dr. Samuel Schaefer, city health officer, and Dr. C. W. Rogers, Winona pediatrician.

* * *

The official opening of the new Slayton Clinic in a modernistic one-story building was held on March 27. The new structure, which contains seventeen rooms, is owned by Dr. Roy F. Pierson, who has practiced in Slayton for nine years. The clinic is staffed by four physicians: Dr. Henry C. Doms, Dr. Vernon A. Doms, Dr. Osmund A. Wisness and Dr. Pierson.

* * *

At a meeting of the Lions Club in Duluth late in March, Dr. Martin O. Wallace discussed the reason for the opposition of the medical profession to compulsory national health insurance. On April 12, Dr. Wallace was the principal speaker at a meeting of the Duluth Business and Professional Women's Club, where he spoke on "Pros and Cons on Compulsory Health Insurance."

* * *

Among Minnesota physicians attending a continuation course in physicial medicine at the University of Minnesota March 28 through 30 was Dr. Arthur I. Arneson of Morris.

A lecture on the medical aspects of atomic explosions was presented by Dr. Hanns C. Schwyzer, Saint Paul, at a meeting at Fort Snelling on April 19. The meeting marked the start of a joint training program of army and naval medical reserve officers in the Twin Cities area.

* * *

Dr. John C. Mickelson, of the Mankato Clinic, attended the sectional meeting of the American College of Surgeons at Butte, Montana, on April 5 and 6.

* * *

As guest speaker at a meeting of the Little Falls Rotary Club on April 7, Dr. Edwin J. Simons, Swanville, discussed aspects of socialized medicine. Dr. Simons is director of the District 8 office of the Minnesota Department of Health.

* * *

"Current Medical Bills in the Legislature" was the title of a talk given by Dr. Gordon C. MacRae, Duluth, at a meeting of the St. Louis County Medical Auxiliary in Duluth on April 12.

* * *

Dr. Maurice B. Visscher, head of the department of physiology of the University of Minnesota, attended a meeting of the medical advisory council of the American Foundation for High Blood Pressure, which met in Cleveland on April 15. The foundation was established in 1947 to support and stimulate research in the underlying causes and treatment of hypertension and arteriosclerosis.

The board of trustees of the Community Health Center in Two Harbors announced on April 7 that Dr. William Kosiak, formerly of Chisholm, had joined the staff of their hospital and clinic. Dr. Kosiak, a graduate of the University of Minnesota Medical School in 1947, interned at Ancker Hospital in Saint Paul and practiced for a year at Milaca before going to Two Harbors. In his new position he replaces Dr. Edward Menefee, who left at the end of March to begin a fellowship in pathology at the Mayo Clinic.

* * *

Dr. Raymond K. Minge, formerly of Minneapolis, joined the staff of the Worthington Clinic on April 4, replacing Dr. W. R. Schmidt, who withdrew from the clinic to engage in special studies in Minneapolis. Dr. Minge, a graduate of the University of Minnesota Medical School, served in the army during World War II and recently completed a three-year fellowship at Minneapolis General Hospital.

* * *

After two years of practice in Lemmon, South Dakota, Dr. George R. Smith moved to Hutchinson on April 5 to become associated in practice with a clinic there.

* * *

At a meeting in Windom on March 30, residents of Cottonwood County decided to form a health council. Named as temporary chairman of the group was Dr. Elmer S. Schutz of Mountain Lake. Dr. Merton A. Johnson, Storden, was appointed vice chairman. At the



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organizational meeting, Dr. B. O. Mork, Worthington, director of Health District 5, presented a talk on the formation of a county-wide health council.

* * *

In an election held in Willmar on April 12, Dr. Berton J. Branton was named mayor of the city for the next two years.

* * *

Among the officers of the Nobles County Health Council elected at a meeting held in Worthington on April 6 were Dr. Donald E. Nealy, Adrian, vice chairman, and Dr. Helen B. Wolff, Worthington, secretary-treasurer.

* * *

At a continuation course at the University of Minnesota on April 11 and 12, Dr. Raymond J. Jackman, Rochester, spoke on "Symptomatology and Technique of Proctoscopic Examination," "Anal Infections" and "Anal Abcess and Fistula in Ano."

* * *

Dr. Dean Clark, formerly of St. Paul, has been appointed director of the Massachusetts General Hospital. A graduate of Johns Hopkins Medical School in 1932, Dr. Clark was director of the Federal Office of Vocational Rehabilitation in 1933-34, chief of the hospital section, medical division, of the Office of Civilian Defense in 1942-43. After serving with the U. S. Public Health Service, he has recently been medical director of the Health Insurance Plan of Greater New York.

* * *

Numbered among "Minnesota's 100 Living Great" chosen recently by a poll sponsored by the Minnesota Junior Chamber of Commerce were: Dr. Alfred W. Adson and Dr. Charles W. Mayo of Rochester, and Dr. Frank E. Burch of St. Paul.

* * *

Dr. Eugene V. Meyerding, son of Dr. and Mrs. E. A. Meyerding of Saint Paul, and a graduate of the University of Minnesota Medical school, left for Camp Stoneman in California, April 25. He is a First Lieutenant in the United States Army Medical Corps and this is his first assignment from the Surgeon General's office, Washington, D. C.

* * *

Dr. Robert E. Priest was the guest speaker at the Pacific Coast Oto-Ophthalmological meeting at Coronado, California, April 5. Dr. Priest spoke on "Tracheotomy in Bulbar Poliomyelitis."

* * *

Drs. Walter A. Fansler and Howard M. Frykman addressed the Stearns-Benton County Medical Society in St. Cloud at the regular April meeting. They held a round-table discussion on "Common Rectal Problems."

* * *

Dr. Clyde A. Undine of Minneapolis attended the meeting of the American College of Physicians at New York City, March 28 to April 1. While in New York he attended the Knickerbocker Hospital concert at the Colony Club, featuring Robert F. Rounseville of the New York City Opera.

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Dr. William A. Brand of Redwood Falls was honored as an outstanding citizen and member of the Lions Club at a dinner given by the Lions Club recently. Dr. Brand has completed forty-five years of service to the community. He has been mayor of the city and for many years has served as health officer and coroner. Each year the Lions Club similarly honors an outstanding citizen.

HOSPITAL NEWS

In an article in a recent issue of the *Modern Hospital* magazine, progress towards a "surgical utopia" at the University of Minnesota Hospitals is described by Dr. Fred T. Kolouch, a former staff member who is now with a clinic in Twin Falls, Idaho.

Dr. Kolouch discusses the work done by the hospitals' three-year-old surgical committee in solving problems of caring for surgical patients and in improving staff morale. "The modern complexities of surgery," Dr. Kolouch writes, "have developed rapidly, with little objective thought being directed by the surgeons toward the impact of their techniques on the hospital organization, personnel and facilities. Likewise, hospital administration and nursing are only slowly adjusting to the new needs of surgery."

Such problems at the University Hospitals are discussed by the surgical committee, which is composed of representatives of the entire staff, from surgeons to orderlies. As a result, there is a greater understanding between staff members, and organizational changes can be made to save nursing time and improve care of patients.

A hospital for the community of Wells was apparently assured on March 22 when the village council let contracts for $328,000 for the construction of the building. On April 1 a drive for $25,000 in additional funds was started, the money being needed, it was explained, to finance preparation of the grounds, landscaping and a proposed enlarging of the hospital from twenty-six to thirty-two beds.

* * *

The possibilities of having a third Community hospital in Faribault County were considered at a Community Club meeting in Winnebago on Marcch 10. A week earlier, Dr. M. D. Cooper and Dr. J. L. Mills, who operate the Winnebago Hospital, announced that the institution would be closed on September 1 unless the village took over the operation of it. A committee was directed to meet with the city council and discuss the matter.

* * *

The physicians of Eitel Hospital Staff on April 21, 1949, formed a corporation for the purpose of establishing and administering the Student Nurses' Loan Fund of Eitel Hospital.

The officers elected to operate the loan fund were: W. R. Jones, M.D., F. R. Hirshfield, M.D., and H. A. Reif, M.D., Trustees; Olga S. Hansen, M.D., Treasurer.

* * *

Among the staff departmental heads recently named at St. Mary's Hospital, Duluth, are the following: Dr. K. E. Latterell, anesthesiologist; Dr. W. V. Knoll, pathologist, and Dr. J. R. McNutt, radiologist.



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BLUE SHIELD NEWS

As of March 31, 1949, Minnesota Blue Shield had made payment on 4,877 cases in the amount of $191,116.57. This represented the amount paid for the first three months of 1949. This amount, when compared with the total payment of $166,229.63 for 1948, quite emphatically emphasizes the rapid growth of Blue Shield within the state.

During the last few months, the Blue Shield representatives have been exceedingly busy bringing in many new subscribers in both large and small groups. At the present time, subscribers include groups from many of the large retail stores in the Twin Cities, the Investors Syndicate; Farwell, Ozmun, Kirk; Donaldson Co., Inc., the Coolerator Company of Duluth, to cite but a few. Also enrolled are such national organizations as Swift and Company, Ford Motor, and most recently Northwest Airlines.

Northwest Airlines is perhaps the largest group and will be covering approximately 3,000 persons, not only in Minnesota but also the northwestern part of the United States, including Detroit, Chicago, Seattle, Anchorage, Alaska, as well as stations in the Orient. With the addition of this group Blue Shield can really put into practice the boast that "Blue Shield will pay your doctor for his services in any part of the world." To facilitate and expedite the handling of cases outside of the country, a special system of reporting such cases has been devised so that it will be possible to clear and make an allowance on a case in the Orient almost as rapidly as in the Twin Cities. Such national enrollment would appear to be an excellent argument against any type of socialization of medicine, since it is possible for a local organization to provide voluntary medical care to a group, such as Northwest Airlines, which is international in scope.

In a recent issue of a national publication for the medical profession, Mr. Wallace Werble, a long-time analyst of Washington affairs, points out the various political aspects of the national plan for health insurance. From this article, it would appear that it is not too likely that any such program will be enacted into law during the present Congressional session. Mr. Werble makes this conclusion based on the fact that any such program must be first heard in the various committees and also be thoroughly investigated. Since any such program would be extremely large in nature and thereby require considerable time for study, it does not seem reasonable to assume that any definite action will be taken before the 1950 session of Congress. Action in 1950 is anticipated, since many members of both Houses of Congress will be coming up for re-election, and Congressmen will want to fulfill if possible the campaign promises made in 1948. It is anticipated that the legislation will be an entirely new proposal and not be any revised form of the Wagner-Murray-Dingle Bill.

The longer it is possible to forestall action on any national health legislation, the greater will be the opportunity of the public together with the medical profession to prove the worth of voluntary medical insurance. Therefore, we are particularly glad to enroll such



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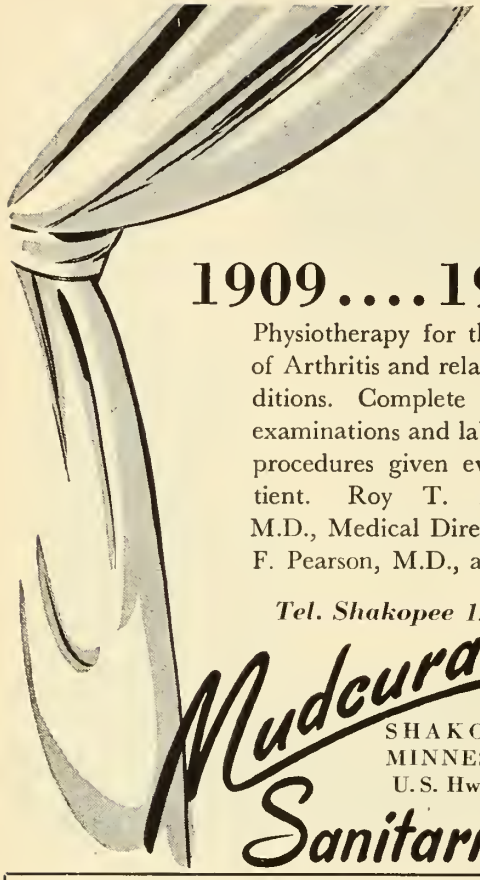
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Surgical Anatomy and Clinical Surgery, two weeks, starting May 16, June 20, July 25.
Surgery of Colon and Rectum, one week, starting June 13, September 12.
Esophageal Surgery, one week, starting June 13.
Thoracic Surgery, one week, starting June 20.
Breast and Thyroid Surgery, one week, starting June 27.
Fractures and Traumatic Surgery, two weeks, starting June 13, October 3.
GYNECOLOGY—Intensive Course, two weeks, starting June 20, September 26.
Vaginal Approach to Pelvic Surgery, one week, starting May 16, June 13, September 19.
OBSTETRICS—Intensive Course, two weeks, starting May 16, September 12.
MEDICINE—Intensive General Course, two weeks, starting June 13, October 3.
Electrocardiography and Heart Disease, two weeks, starting July 18.
Gastroenterology, two weeks, starting June 27.
Personal Course in Gastroscopy, two weeks, starting May 16, June 13.
PEDIATRICS—Diagnosis and Treatment of Congenital Malformations of Heart, two weeks, starting June 13.
Personal Course in Cerebral Palsy, two weeks, starting August 1.
DERMATOLOGY—Formal Course, two weeks, starting June 13.
Informal Clinical Course every two weeks.
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UROLOGY—Intensive Course, two weeks, starting September 26.

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national groups as mentioned herein, also to enroll groups through their unions which in turn act as a stimulant upon the smaller groups. The next move, of course, will be to be able to enroll any and all applicants in Blue Shield regardless of group affiliation.

ANALYSIS OF ELECTROCARDIOGRAMS OF NINETY-THREE PATIENTS WITH ACUTE RHEUMATIC FEVER

(Continued from Page 485)

ours, and the incidence of T wave changes among their patients was almost twice as great as ours. We are in agreement with the conclusions of these authors that T wave changes actually occur with a much greater frequency than PR interval changes in acute rheumatic fever. However, because the T wave changes are usually of a transitory nature (indeed, they may come and go in the space of a day), they are frequently missed if tracings are not obtained frequently enough.

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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

OPERATIVE SURGERY. Frederick C. Hill, B.A., M.S. (Surg.), M.D., Associate Professor of Surgery, Creighton University School of Medicine, Omaha, Nebraska. Foreword by Charles W. Mayo, B.A., M.S. (Surg.), M.D., Section on Surgery, Mayo Clinic, Rochester, Minnesota. 698 pages. Illus. Price, $12.75, cloth. New York: Oxford University Press, 1949.

TRANSACTIONS OF THE THIRD AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY. 412 pages. Illus. Price $9.00, cloth. Portland, Oregon: Western Journal of Surgery Publishing Company, 1948.

YOUR BABY: THE COMPLETE BABY BOOK FOR MOTHERS AND FATHERS. By Gladys Denny Shultz, Contributing Editor, *Ladies Home Journal* and Lee Forrest Mill, M.D., former President, American Academy of Pediatrics. 278 pages. Illus. $3.50. Garden City, N. Y.; Doubleday & Company, Inc., 148.

This is a well-written and well-organized baby book. It presents all the most recent advances and ideas in infant and child care up to school age.

No problems are left unanswered and many are anticipated for parents and likewise cleared up. Father is included, as an important cog in bringing up baby, and that is as it should be.

The book is easy reading, interesting and understandable for both parents and the medical profession.

E.L.S.

AMERICAN RED CROSS—First Aid Textbook for Juniors. Carl J. Potthoff, M.D., 127 pages. Illus. Philadelphia, Blakeston Co., 1949. Price $1.00.

This small textbook for school children, twelve to fourteen years of age, has been written by Carl J. Potthoff, M.D., National Director of First Aid and Assistant Medical Director of The Red Cross. The author was formerly a high school principal and school superintendent and for eight years was a member of the faculty of the University of Minnesota School of Medicine.

The purpose of the book is to provide a text for class work in first aid. Statistics indicate that those who receive first aid education show a markedly lower incidence of accidents as a group. A knowledge of first aid principles, too, is often life saving when accidents occur.

This small volume is written simply, is well illustrated, and is particularly adapted to junior students. In view of the fact that some 15,000 children from five to nineteen die from accidents and almost 1,500,000 suffer disabling injuries, there is great need for first aid instruction.

OCCUPATIONAL MEDICINE AND INDUSTRIAL HYGIENE. By Rutherford T. Johnstone, A.B., M.D. Price $10.00. 604 pages, with 117 illustrations. St. Louis, Mo.: The C. V. Mosby Company, 1948.

This book possesses a gold mine of information and is most instructive. The author states, "He has adequately combined the clinical aspects of occupational diseases with a description of industrial processes, their appraisal and control from his own personal experience." He

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further states that, "Occupational medicine is interested in man and *all* that aids or hinders his welfare."

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Part II deals with industrial solvents, the aliphatic, halogenated, chlorinated and aromatic hydrocarbons with detailed discussions of their occupational uses, hazards, exposures, pathology and physiological behavior, clinical signs or symptoms, medical-legal aspect and treatment, appended with many case histories and personal comments.

Part III deals with occupational exposure to the heavy metals such as lead, arsenic, mercury, chromium, copper, aluminum, manganese, phosphorus, antimony and the new industrial hazard, beryllium of fluorescent lights.

Part IV deals rather fully with known dust hazards of silica compounds and asbestos, with their effects on the respiratory system; the inert dusts and a complete discussion of dermatosis; the newer field of synthetics and the special industrial processes of electroplating, degreasing, sand blasting, welding and its hazards.

In complete detail the author discusses all phases of industrial hygiene. The chemical content of the common trade-name products is of interest in a well-tabulated, easily read appendix. Adequate illustrations occur throughout the book.

The general arrangement affords easy reading and each subject is presented in such a fascinating manner that a general practitioner may grasp the significance with as much ease and interpretation as a Specialist in Industrial Medicine who seeks further knowledge. The reviewer was fascinated by the thoroughness of the author and the simplicity of arrangement by the publisher and believes this book an essential part of any physician's library.

CYRIL M. SMITH, M.D.

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. . . Stated in another way, what is happening is this. If all Social Security taxes on employers and employees amount to $1 billion in a given year, that amount is paid into the Federal Treasury in exactly the same way as income taxes are paid. Then the Treasury, as a bookkeeping device, and nothing more, gives to the Trustees of the Old-Age and Survivors Trust Fund $1 billion in IOU'S. The Treasury spends the money, has some IOU's printed, gives these to the Trustees, and then, as a bookkeeping device, charges benefit payments and administrative costs to the Trust Fund.

In the early stages of an insurance system premiums pour in in excess of benefits paid out. In a legitimate private insurance company the funds in excess of claims are invested and jealously guarded. In the Government Social Security scheme the money is spent currently. To add insult to injury the Government, after swiping the money, makes the public at large, through its income taxes pay interest on the money that isn't there. —*American Medicine and The Political Scene,* March 24, 1949.

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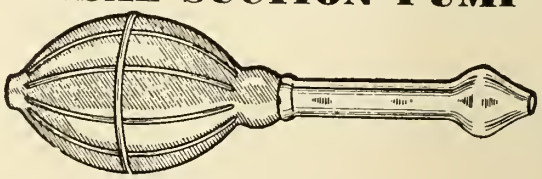
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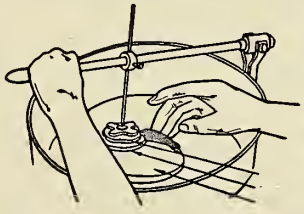
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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 32 **June, 1949** **No. 6**

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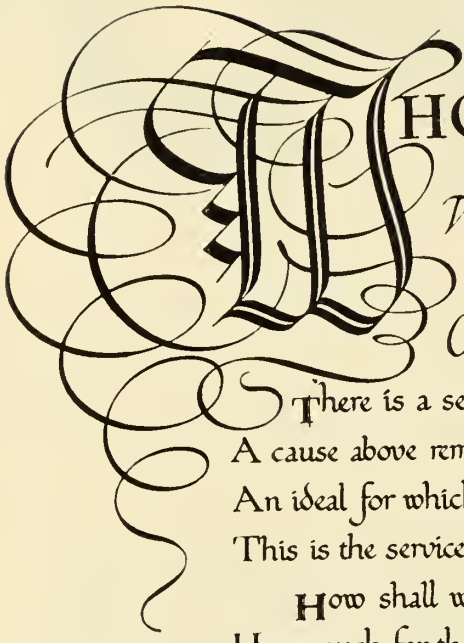
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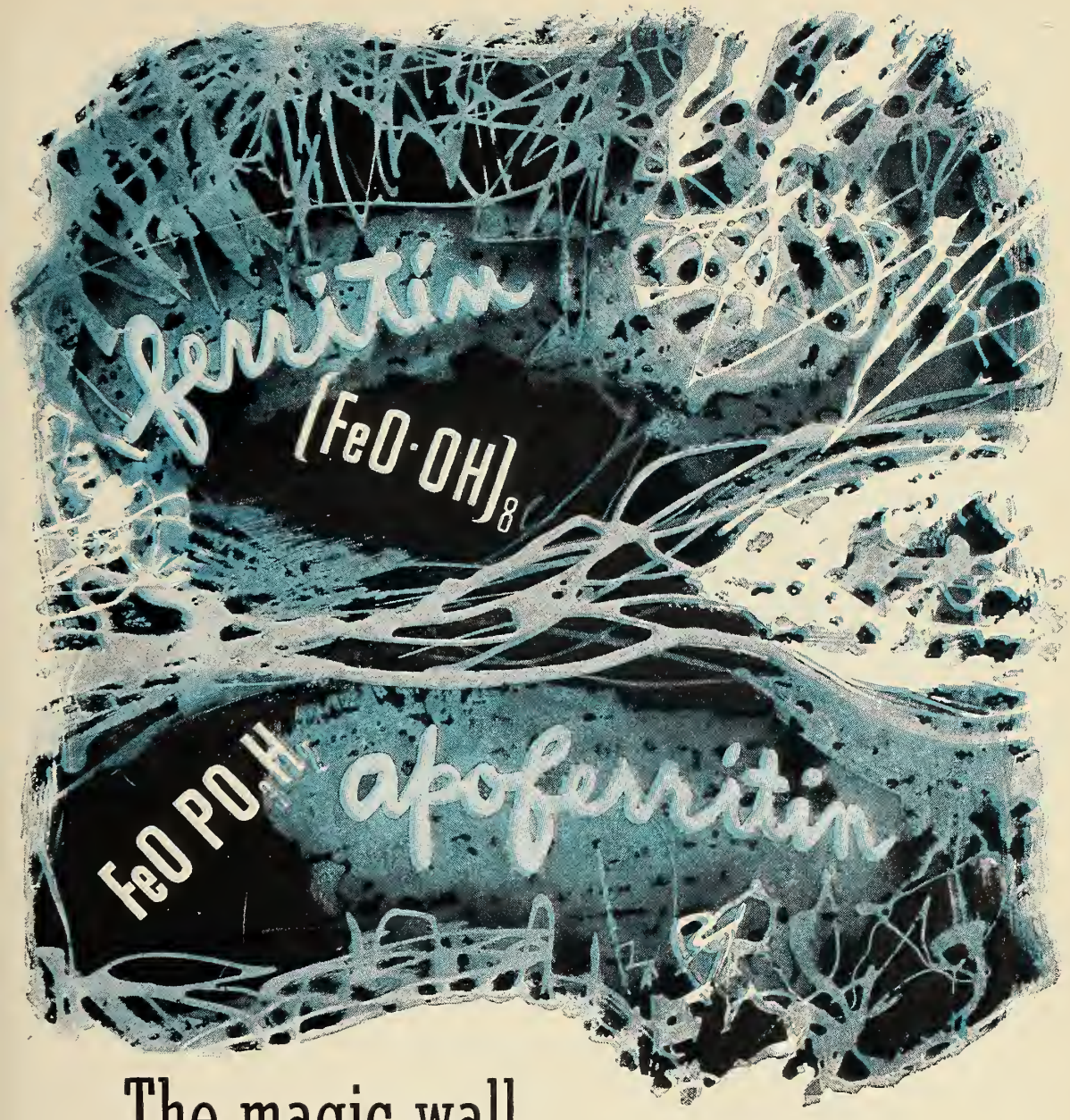
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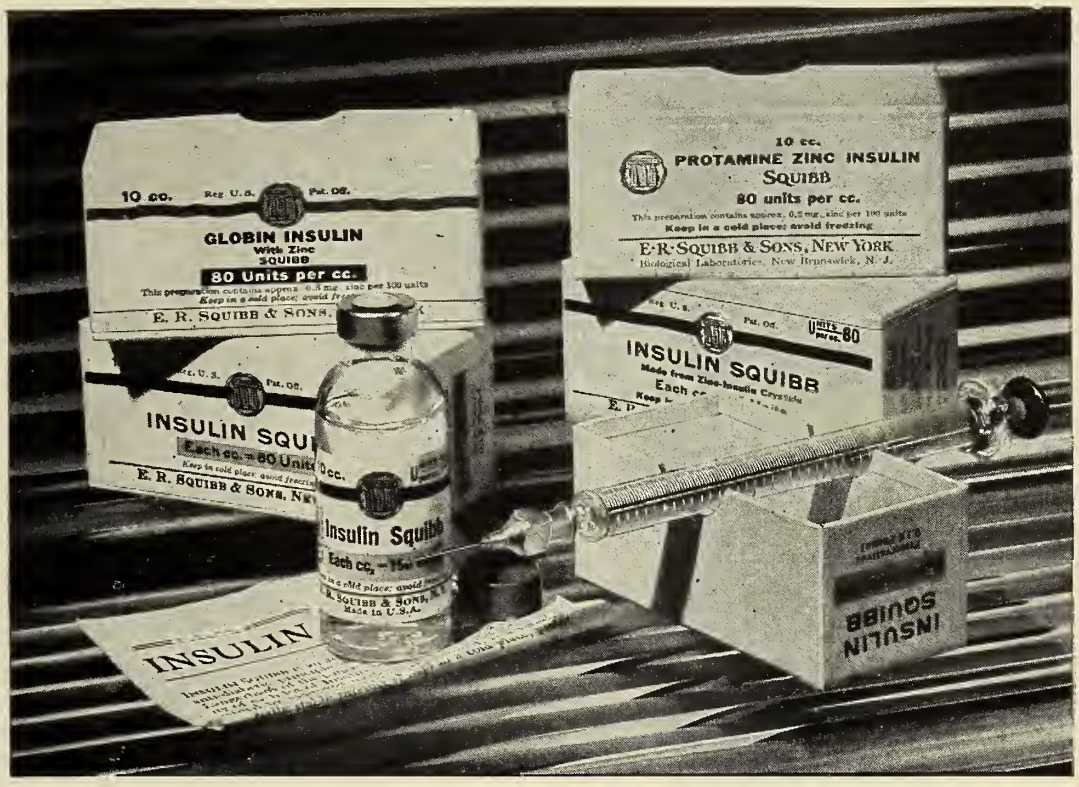
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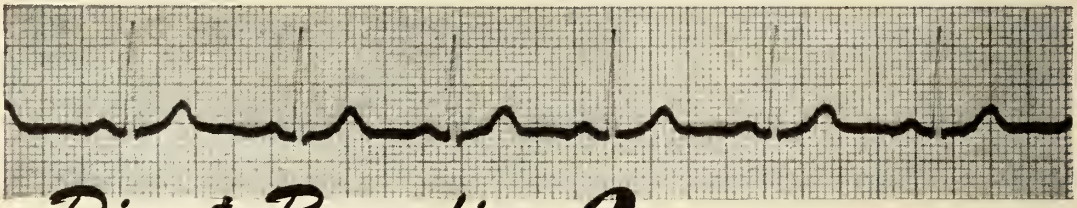
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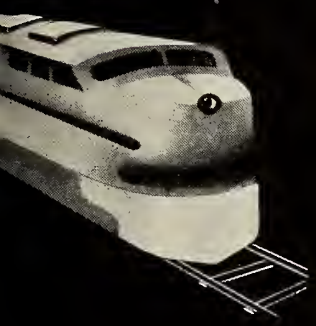
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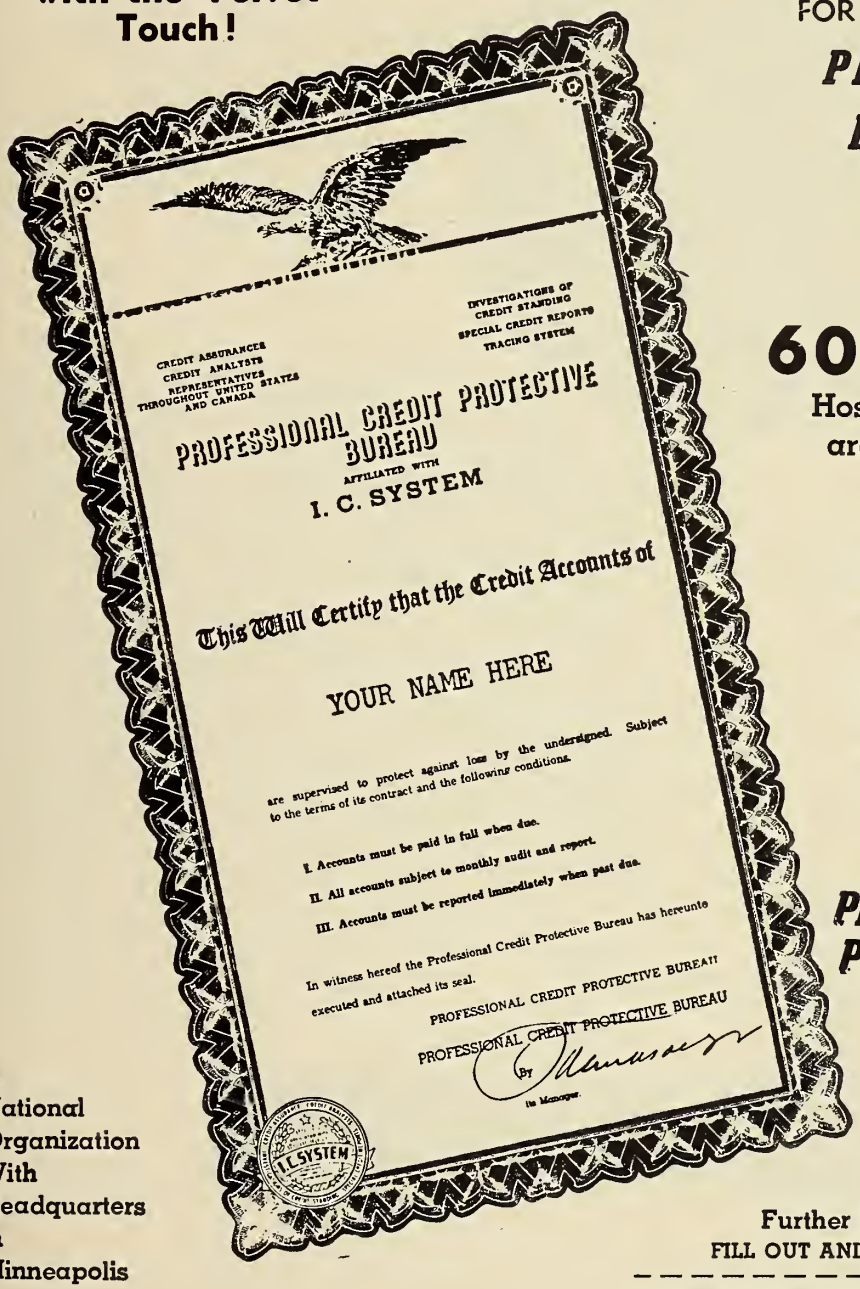
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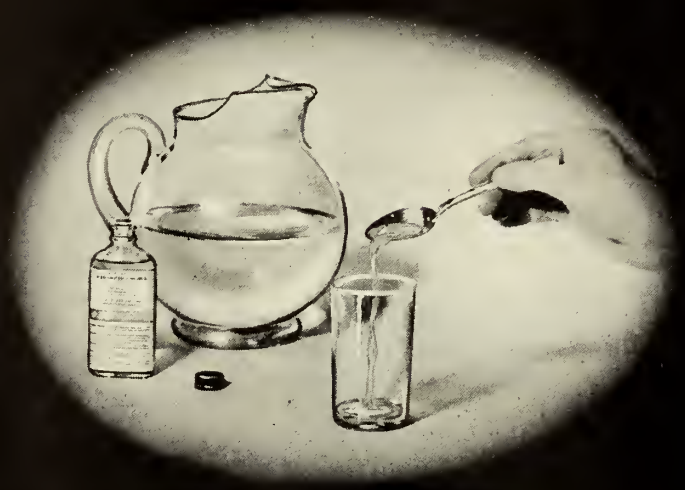
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CEREBRAL ANGIOGRAPHY

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CEREBRAL angiography is the procedure by which the intracranial vascular system is visualized roentgenographically following the intracarotid injection of radiopaque dyes. The procedure was first used in 1927 by Egaz Moniz,[8] a Portuguese neurologist. It was not immediately accepted nor extensively used until the few years before World War II when it received widespread acceptance in Europe. It became accepted in this country after the war. Because of the inherent toxicity of the dyes originally used, the risk of the procedure did not at first seem to be worth the added information obtained, but after the pioneers demonstrated the great utility of the procedure and introduced less toxic dyes, cerebral angiography as an accessory diagnostic aid in intracranial lesions came into frequent general use.

Before Moniz used angiography in his clinic, he experimented extensively with animals and cadavers. He used many bromine, strontium, and iodine salts before finally selecting a 25 per cent solution of sodium iodide for use on his patients. This drug was not ideal because it could not be sterilized and it had to be freshly prepared before injection. There were also many unpleasant reactions from its use. In 1931 Löhr and Moniz simultaneously began using thorotrast, a 25 per cent colloidal suspension of thorium dioxide which has the same viscosity as blood. This drug caused few, if any, immediate side effects, and its use became generalized. However, thorotrast is radioactive. It is not excreted from the body but is picked up and retained by the reticulo-endothelial system. Some concern over the radiation effect was felt since sarcomas in rats could be caused by the injection of the drug, but those who used it felt that by restricting the amount of thorotrast to 30 c.c., the long-term toxicity of the drug would be negligible. No ill effects ascribable to the use of thorotrast were reported by the early workers. However, Jacobson and Rosenbaum[5] reported extensive fibrosis in the reticulo-endothelial system several years following its injection, and MacMahon, Murphy, and Bates[7] reported a patient who developed a sarcoma of the liver twelve years after the injection of thorotrast. Because of this radioactivity, thorotrast is being used less and less frequently for cerebral angiography.

Torkildson and Engeset[1] in Sweden, and Gross[2] in this country, in 1942 began the use of diodrast in 35 per cent solution. This dye fills the smaller vessels better than thorotrast but does not give the excellent roentgenographic contrast obtained with thorotrast. Most patients experience some mild reactions to its injection, such as a murmuring sound, a flushing of the face or pain over the side of the head. Occasionally convulsions have occurred. These side effects are very infrequent, and 35 per cent diodrast is the dye now most widely used.

Technique of Injection

The procedure is done under nembutal sedation and procaine infiltrated locally. It is wise to infiltrate the carotid bifurcation thoroughly with novocain solution to eliminate or abolish the carot-

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id sinus reflex. The dye is injected into the common carotid artery. In most clinics the artery is exposed and the puncture of the artery is made under direct vision. There is a definite



Fig. 1. Carotid angiogram in a patient with an aneurysm of the internal carotid artery. The patient was treated by trapping the aneurysm between ligatures applied on the internal carotid artery above and below the site of origin.

trend toward inserting the needle percutaneously. The procedure we have followed has been to attempt a percutaneous injection, and if not successful, to surgically expose the artery. Many surgical techniques for exposure of the artery have been described. We have isolated the common carotid by making a short transverse incision above the thyroid cartilage at the anterior edge of the sternocleidomastoid muscle. A 17- or 18-gauge needle is then inserted into the vessel. An attempt is made to push the point of the needle to the posterior part of the artery and then to turn the bevel of the needle posteriorly so that the majority of the dye, as it is injected, joins the stream of blood flowing up the internal carotid artery. A hard rubber tube with a three-way stopcock is connected to the needle, and a slow stream of saline is kept flowing through the needle until everything is in readiness, when 10 to 15 c.c. of the dye is forced into the carotid artery as rapidly as possible. Just before the injection is complete, an exposure is made to demonstrate the arterial tree, and three seconds later a second exposure is obtained in order to visualize the venous channels. The circulation time from common carotid to internal jugular through the internal carotid is about four seconds, and through the external carotid this time is about six seconds. Some persons slow this circulation down by compressing the jugular during the procedure, others by occluding the common carotid below the needle.[1] So far we have felt that these measures are unnecessary and complicate the procedure.

The technique of injection of the vertebral artery is similar to that of the carotid except for the site of injection. The vessel is visualized as it arises from the subclavian artery. It is the first branch and transverses in a cephalad direction. The needle is inserted as described above, and 10 to 20 c.c. of diodrast are injected and roentgenograms made. Both lateral and anteroposterior views are obtained.

Clinical Interpretation

Aneurysms.—The most frequent locations of aneurysms of the cerebral vessels are at the bifurcations of the large basal vessels, such as the junction of the internal carotid with the anterior or middle cerebral artery. Less frequent are aneurysms at the junction of the carotid with the anterior or the posterior communicating artery or on the internal carotid artery itself.

With arteriography, both the location and size of the aneurysm may be ascertained. Occasionally the size of the aneurysm as seen in the angiogram is considerably smaller than that seen at the time of operation. This is due either to a clot of blood within the aneurysm or to the neck of the sac being only partially filled with the dye. Occasionally the neck of the aneurysm may be so small that none of the contrast media enters the sac, in which case the aneurysm is not visualized.

The internal carotid artery enters the cranial cavity through the foramen lacerum. It remains extradural until it reaches the level of the anterior clinoid process. Extradural aneurysms rarely burst because they are well protected by this overlying dural sheath. Clinically they resemble slowly growing neoplasms and must be differentiated from parasellar tumors. An aneurysm in this location (extradural portion of the internal carotid artery) encroaches on the third, fourth, fifth, and sixth cranial nerves so that various combinations of palsies of eye movements and

hypesthesia over the face occur. Occasionally direct pressure by the aneurysm on the optic chiasm or nerve results in visual abnormalities. The aneurysm may produce erosion visible in roentgenograms in the parasellar region. A definite differential diagnosis between aneurysm and parasellar tumor can usually be made preoperatively by angiography.

Aneurysms arising on the internal carotid artery or its branches, after the artery has pierced the dura at the level of the anterior clinoid process, may produce no symptoms until they rupture. They are usually located on the posterior aspect of the carotid siphon.

The surgical treatment of intracranial aneurysms consists of either occluding the stalk or neck of the aneurysm or trapping the aneurysm by occluding the vessel both proximally and distally to the lesion. If the aneurysm is located below the origin of the posterior or anterior communicating arteries, the therapy of choice is ligation of the carotid artery in the neck, which occludes the proximal flow of blood, and then occluding the vessel intracranially distal to the aneurysm. Ligation of the carotid artery in the neck does not embarass an aneurysm arising distal to the communicating vessels. Aneurysms in this location are best treated by an intracranial approach.

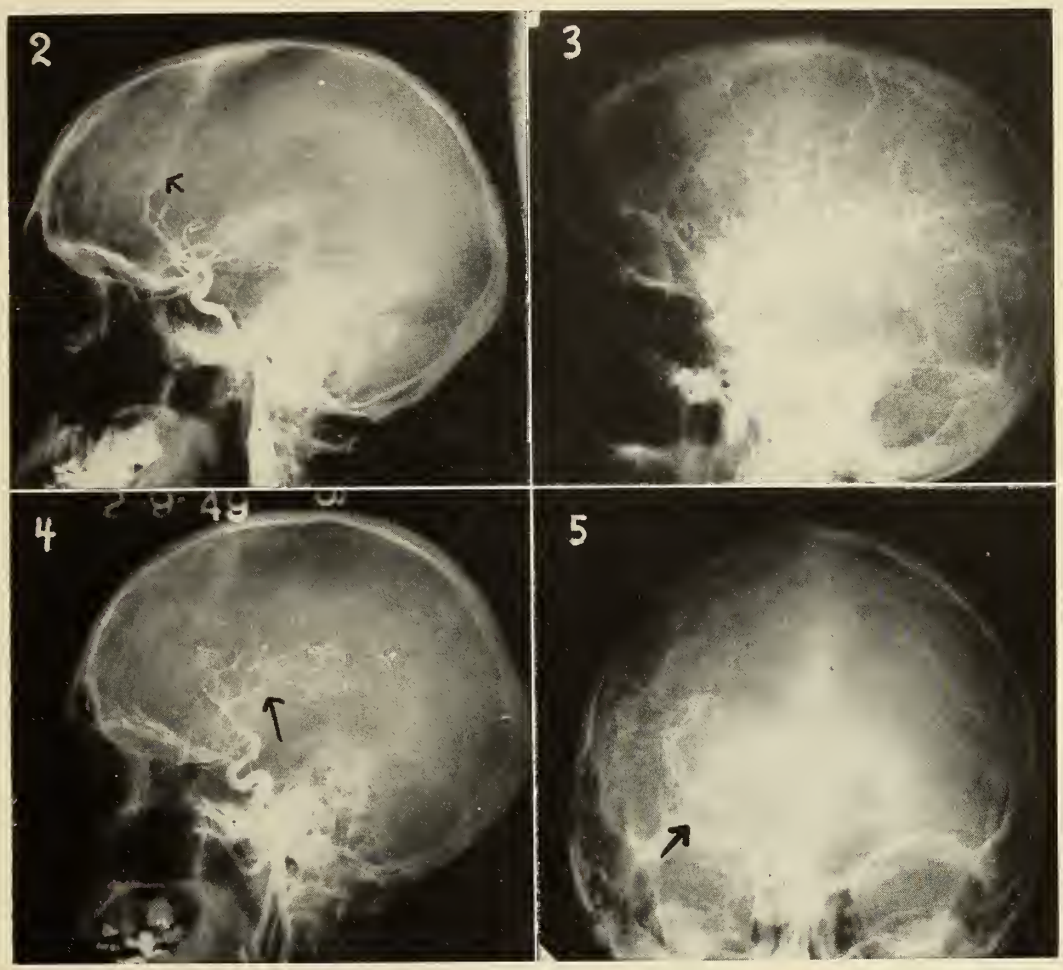


Fig. 2. Carotid angiogram in a patient with hydrocephalus. Note the wide arc of the anterior cerebral artery as it curves around the lateral ventricle.

Fig. 3. Carotid angiogram in a patient with an angioma over the surface of the brain.

Fig. 4. Carotid angiogram showing upward displacement of middle cerebral vessels by a temporal lobe glioma.

Fig. 5. Carotid angiogram in the same patient as in Figure 4, showing upward displacement of the middle cerebral artery as seen in an anteroposterior view.

Brain Injuries.—Löhr[6] has studied angiographically 1,000 patients with skull fractures. He classifies brain injuries as (1) "commotio cerebri" and (2) "contusio cerebri." In the commotio

cerebri group he found very narrow constricted vessels on the injured side and interpreted this as due to brain swelling or possibly to vascular spasm. In the contusio cerebri group he observed an increased resistance to injection of the dye and noted that the vessels were broad and flat. Angiograms in patients with subdural or extradural hematomas reveal the vessels to be displaced away from the lateral wall of the skull.

Brain Tumors.—Brain tumors are localized by (1) displacement of the normal vessels supplying the brain, (2) enlargement of afferent vessels to a tumor or efferent vessels from a tumor area, and (3) pathological changes of blood circulation within the tumor itself.

The arteries of the brain lie on the surface and normally take a tortuous course as they follow the cerebral convolutions. A space-occupying tumor will tend to displace the vessels away from its center. Also as the tumor enlarges, the overlying cortical convolutions become flattened and the arteries become stretched and thin, separated from each other, and follow straight courses around the area of localized enlargement. The cerebral veins may be displaced by the tumor mass or engorged due to the slowing of cerebral circulation resulting from increased intracranial pressure, but the extreme variability of the venous drainage in normal brains makes their displacement only of confirmatory value in diagnosing space-occupying lesions.

Tumors produce characteristic abnormalities visible in angiograms. The basic changes will be described briefly; many intermediate forms, of course, exist.

Anteroposterior View.—The ascending portion of the anterior cerebral artery is examined for displacement across the midline by a tumor lying laterally in the hemisphere. The horizontal portion of the anterior cerebral is then examined for possible elevation by a tumor mass such as a hypophyseal tumor lying beneath it. The horizontal portion of the middle cerebral artery may be elevated by tumors in the anterior portion of the temporal lobe. This is important in distinguishing these tumors from those in the posterior portion of the temporal lobe, which do not disturb this portion of the middle cerebral artery. The carotid siphon may be straightened or displaced, indicating a lesion in the vicinity of this structure.

Lateral Views.—An upward or downward displacement by a tumor of the pericallosal and Sylvian vessels may be visualized. This displacement occurs appropriate to the location of the tumor, either above or below the major vessels. Centrally located tumors cause direct lateral pressure and will not produce an appreciable shift in the position of these vessels. In the latter case, stretching of the arteries with elimination of the frequent curves can be significant. Vessels may be displaced in a circular fashion around a tumor. If there are no vessels within the circle, a cyst or abscess or an astrocytoma must be considered.

Ventricular enlargement, either congenital or acquired, will cause straightening and stretching of all vessels but most noticeably those in the Sylvian group. In addition, the arch of the anterior cerebral artery around the ventricle may be widened. The venogram may reveal the carotid veins to be small, due to compression resulting from the increased intracranial pressure.

The displacement of vessels as described above is a valuable method of localizing tumors, but the visualization of the tumor circulation not only more accurately defines the tumor's position but it may also make possible a histological diagnosis of the type of tumor. Moniz was the first to describe variations in tumor circulation depending upon the histological type of tumor. Engeset[1] believes that a more accurate histological diagnosis can be obtained by angiography than by frozen sections of the tumor. He feels sufficiently confident with angiography to ascribe a lesion as inoperable from its angiographic appearance.

Glioblastoma Multiforme.—Tönnis[9] was the first to describe the angiographic appearance of the glioblastoma multiforme. At operation he noticed arterial blood in the veins surrounding these tumors and in angiograms pointed out the frequency of intraneoplastic arteriovenous aneurysms. Because of the rapid circulation through these tumors due to these fistulas, tumor circulation may be visible in the arteriogram and not in the venogram. Several cases have been reported in which the tumor circulation of glioblastoma was seen on venograms,[5] but the angiographic diagnosis of glioblastoma multiforme from a roentgenogram exposed so late that the normal venous channels are filled is precarious. The cir-

culation of most other tumors will appear on venograms. The glioblastomas have an abundant vascular supply with the vessels irregularly arranged and of irregular calibre. They show irregular concentration of dye in the veins, and between the vessels are small irregular spots which may be miliary aneurysms. Large arteriovenous aneurysms and one or two abnormal veins leading away from the tumor area may be visible. The circulation may vary from a faint spotted haze of weak contrast accumulation, with small pinhead-sized vessels which cannot be followed for over 1 centimeter, to more pronounced vascular changes with huge loops of vessels 2 or 3 centimeters in length. Occasionally vascular changes are present only at the periphery of the tumor, indicating extensive central necrosis. On the venogram in these cases there is either no dye left in the tumor area or only a light capillary haze.

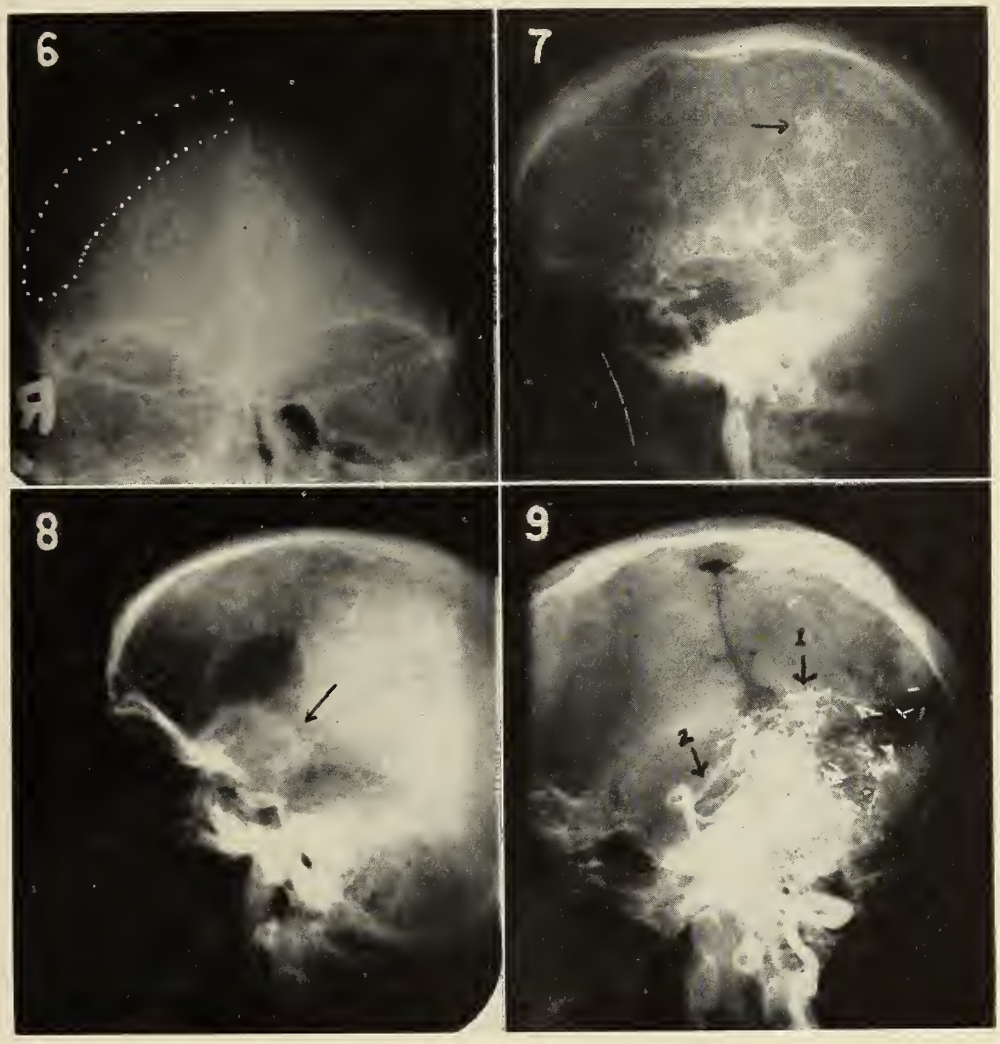


Fig. 6. Carotid angiogram in a patient with a subdural hematoma. Note the space between the cerebral vessels and the cranium.

Fig. 7. Carotid angiogram in a patient with a parietal lobe tumor (meningioma of falx).

Fig. 8. Carotid angiogram (venous phase) in a patient with a sphenoid ridge meningioma.

Fig. 9. Vertebral angiogram showing (1) a meningioma extending both above and below the tentorium, and (2) the source of blood supply to the tumor (from posterior cerebral arteries).

Metastatic Tumors.—Metastatic carcinomas, like glioblastomas, have an abundant vascular supply with frequent arteriovenous aneurysms and irregularity of vessels. The presence of normal vessels arranged annularly about the lesion, with just a faint haze of circulation in the tumor

in the arteriogram but with a maximum circulation within the tumor visible in the venogram, is characteristic.

Astrocytomas.—Astrocytomas seldom show any vascularity in either the arterial or venous phase. Some investigators believe that vascular lakes and intraneoplastic circulation visible in venograms is indicative of an astrocytoma, but most reports do not agree with this. According to Engeset,[1] astrocytomas characteristically show a marked dislocation of normal vessels around the tumor with practically no vessels within the curved enclosed area. Vessels seen in the tumor are usually straight and even. Oligodendrogliomas, abscesses, cysts and cholesteatomas cannot be distinguished from astrocytomas angiographically, but with help of clinical symptoms and signs and plain roentgenograms, the diagnosis can usually be made.

Meningiomas.—Meningiomas present a typical picture on the angiogram. They almost always receive part of their blood supply from the external carotid artery, and if this source of blood in the tumor can be demonstrated, it is practically pathognomonic. If the tumor gets all of its blood supply from the external carotid and the internal carotid alone has been injected, the appearance of the normal vessels circling around the extracortical tumor is often diagnostic. In the arteriogram, when the tumor circulation is filled, enlarged vessels leading up to the tumor but ending in brush-like fans at the edge of the tumor may be seen. The vessels are all of constant calibre and have constant dye concentration. Because the circulation through meningiomas is slow, the venogram reveals a diffuse accumulation of dye within the tumor, sharply demarcating it from the surrounding brain tissue. Arteriovenous fistulas within the tumor are rare, and irregularities in size of vessels are not seen in meningiomas. If these features do occur in what otherwise appears to be a meningioma, a sarcomatous type of meningioma or a metastatic carcinoma must be considered.

Vascular tumors.—Angiomatous lesions may produce Jacksonian seizures or subarachnoid hemorrhages. On angiograms they may be confused with a glioblastoma because they contain large arteriovenous fistulas. However, angiomas rarely cause a shift of the midline structures or a ventricular deformity as do the glioblastomas.

Arteriosclerosis.—Cerebral arteriosclerosis is not an indication for angiography in itself, but it produces abnormalities which are sometimes visible in patients suspected of other lesions. There is a loss of the physiological loops and curves of normal arteries; they become straight and there is considerable variation in calibre, with narrowed and enlarged regions or even aneurysms. A sudden break in continuity of an artery due to an intravascular block is said to be characteristic of arteriosclerosis.

Thrombosis.—Carotid thrombosis is an entity which recently has been recognized as a fairly frequent cause of headache, psychic disturbances, hemiparesis, and aphasia. The maintenance of blood supply to the involved areas is insufficient because of poor collateral circulation. No dye can be injected into a thrombosed carotid artery, of course, but an angiogram done on the opposite side may reveal filling of both hemispheres through the collaterals in the circle of Willis.

Indications

The indications for angiography are not closely defined because it is felt that the full value and significance of the procedure is not as yet known. In general, it is used whenever it is felt that such study would provide knowledge valuable in diagnosis and treatment of the intracranial lesion.

Angiography is used routinely in patients with subarachnoid hemorrhage in order to ascertain the site of the vascular rupture. It is often done bilaterally because lateralizing signs may be minimal and the side first injected reveals no abnormality. Poppen injects patients with subarachnoid hemorrhage twenty-four to forty-eight hours after aneurysmal rupture, for he feels that he cannot inject the dye fast enough through an 18-gauge needle to raise the pressure significantly within an aneurysm. Others prefer to wait four to six weeks following the accident in order to provide time for the site of rupture to heal. We have progressively shortened the interval between hemorrhage and angiogram until it has now been reduced to four days. The reason for shortening this interval is twofold: (1) to decrease the period of hospitalization, and (2) to treat the aneurysm before recurrent rupture with possible fatal hemorrhage.

TABLE I. DATA ON 100 CONSECUTIVE ANGIOGRAMS

Indication	Total No.	Unilateral	Bilateral	Positive	Negative
Subarachnoid hemorrhage	42	23	19	6	36
Suspected brain tumor	32	32	0	0	32
Verified brain tumor	21	21	0	13	8
Head injury	2	2	0	1	1
To study circulation of tumor	3	3	0	3	0
Total	100	81	19	23	77

Angiography is used on patients with suspected brain tumors in whom the side of the lesion is known and in whom ventriculographic studies are deemed inadvisable or are found to be unsatisfactory for tumor localization. In addition, angiography is used on patients in whom it is anticipated that it would be advantageous to know either the histological type of tumor or the source of the blood supply to the tumor.

Results

Included in this report are 100 consecutive angiograms performed from 1939 to 1949. The majority of them have been made during the last three years. The carotid artery was injected in ninety-six and the vertebral in four cases. From 1939 to 1945 the open technique of injecting the vessel was used. As the technical aspects of injection of the contrast media as well as the timing and amount of roentgen exposure became standardized, the percutaneous or closed method of injection has been used in increasing proportions. In the last thirty angiograms, twenty have been made with percutaneous injections, and only after the percutaneous method has been unsuccessful has the open method been used in these recent cases.

Thorotrast was used as the contrast media in ten cases, neo-iopax in nine, and diodrast in eighty-one cases. The use of thorotrast was discontinued because of the dangers of radioactivity even though it seemed to provide greater contrast than other media. The use of neo-iopax was discontinued because its injection was associated with a convulsive seizure in four of the nine cases in which it was used. A 35 per cent solution of diodrast has been the media of choice because of the paucity of reactions observed with its use. Irrespective of the type of solution injected, 50 per cent of the patients experienced disagreeable sensations over the side of the head, with visible ipsilateral flushing of the face. Two per cent of the patients experienced tingling in the contralateral extremities.

Table I reveals the indications and results of the angiograms included in this series. Thirty-two were performed on patients suspected of having a brain tumor. These patients were diagnostic problems, the history or neurologic examination suggesting the possibility of a tumor, but in whom the routine diagnostic procedure such as roentgenograms and electrocephalograms were of little help in settling the problem. In none of the thirty-two was there angiographic evidence of a neoplasm. Angiograms were performed on twenty-one patients with verified brain tumors, and in thirteen (62 per cent) of these there was angiographic evidence of the location of the lesion. The histological type of tumor was meningioma in six cases, angioma in one case, glioma in five cases, and granuloma in one case. In three patients angiograms were made in order to study the blood supply of previously verified tumors. The purpose of the study was to ascertain the most feasible method of surgical attack, and in all cases it did furnish the desired data. Angiograms were made on forty-two patients with evidence of subarachnoid hemorrhage. In six (14 per cent) the location of the aneurysm was determined. Two patients with head injuries were subjected to angiography, and in one there was evidence of a subdural hematoma. In the other patient the study was normal.

Summary

1. A series of 100 angiograms is reported.

2. Demonstrable evidence of a tumor was present in 62 per cent of the patients with verified brain tumors.

3. Demonstrable evidence of an aneurysm was present in 14 per cent of the patients with subarachnoid hemorrhage.

4. Angiography has been of definite value as an accessory diagnostic aid.

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NEVOXANTHO-ENDOTHELIOMA

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NEVOXANTHO-ENDOTHELIOMA was the term used by McDonagh[6] in 1912 to describe an odd type of xanthoma characterized by the development, early in life, of a group or groups of yellowish or yellowish-brown papules or nodules, chiefly on the extensor surfaces. McDonagh described five cases and included some others which had been previously reported in the literature, including those of Kobner, Thibierge, Eichoff and Bizzozero. McDonagh concluded from a study of the histologic sections in three of his cases and the pathologic reports of four of the cases selected by him from the literature that the tumors were endotheliomas, belonging to the class of nevi, and that due to fatty degeneration a xanthomatous disorder was produced.

Under the title multiple endothelioma of the skin, Wise,[10] in 1919, reported an eruption in a Jewish boy, aged twenty-two months, characterized by the presence of hundreds of macular and papular lesions on the trunk and extremities. The lesions were rose-red and bluish-red, while the papules were more pronounced in color, most of them being yellowish-brown and salmon-yellow. The eruption clinically resembled urticaria pigmentosa but histopathologic examination ruled out such a diagnosis. A diagnosis of multiple endothelioma of the skin was made.

In 1930, Jacobi and Grund[4] described an eruption, which occurred in an infant of sixteen months, characterized by the sudden development of a large number of reddish-brown tumors on the face and body which varied in size from a pinhead to that of a pea and which were definitely raised from the surrounding skin. The lesions varied in color from flesh to pinkish-yellow to reddish-brown. The clinical diagnosis was xanthoma tuberosum multiplex, but the histologic examination showed the presence of many endothelial cells without definite xanthoma cells. The case was reported as one of nevoxantho-endothelioma.

Adamson,[1] in 1936, discussed various cases which had appeared in the literature under the title of nevoxantho-endothelioma and concluded that most of them were atypical cases of xanthoma multiplex. His article was entitled, "A Note on Multiple Eruptive Xanthoma." Adamson believed that the nevoid character of nevoxantho-endothelioma had not been proved and therefore a clinically descriptive term should be applied to the disorder.

Senear and Caro,[8] also in 1936, reviewed the literature on nevoxantho-endothelioma and presented an additional case in a boy five and a half years of age, whose eruption was characterized by the presence of yellowish nodules on the trunk, extremities and left eyelid. The first lesion had appeared at the age of three on the left thigh as a small round reddish papule which increased in size slowly and eventually became yellowish. These authors urged caution in making a diagnosis of endothelioma of the skin and stated their belief that careful study of all cases of this type will prove that nevoxantho-endothelioma is in reality a special type of juvenile xanthoma.

In 1937, Lamb and Lain[5] reported an additional case of nevoxantho-endothelioma in which the eruption appeared as erythematous nodules at the age of three months in an apparently healthy child. At the age of one year the child became emaciated and presented respiratory difficulties and appeared to be in a critical condition. During the next four or five months the liver became enlarged, and lesions were shown to be present in the lungs by means of roentgen examination. The patient was found to have a disturbance of the lipoid metabolism, the total fat and fatty acids being low while the cholesterol was increased. The child's condition improved, and at the age of five the patient appeared healthy. The weight was normal and many of the tumors had disappeared. Lamb and Lain felt that their case might well be related to Schüller-Christian disease on the basis of involvement of the liver and lungs. They believed that the term nevoxantho-endothelioma should be retained to describe a congenital malformation showing peculiar endothelial giant cells, xanthoma cells, histiocytes and fibroblasts, and disappearing later in childhood. They felt that nevoxantho-endothelioma might be the connecting link

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between Schüller-Christian disease and cutaneous xanthomas.

Clinical Features

Nevoxantho-endothelioma is characterized by an eruption which is either present at birth or which appears rather suddenly in crops within the first few weeks of life. In some cases the eruption may appear at a later date, as for example in Kobner's case, in which the first lesions came at the age of two years, more appeared at fourteen, and some of them were still present at the age of twenty-seven. Thibierge reported two cases, occurring in brothers, in which the onset was at eight and fourteen years, respectively. The eruption consists of round or oval papules and nodules which vary in size from 1 to several millimeters, or larger. The lesions are raised from the surrounding skin and rather sharply demarcated. At the beginning they are usually red in color, becoming distinctly yellow or yellowish-brown. There may be but a few lesions which are frequently grouped, or they may be numerous and widely distributed. The palms, soles and flexor surfaces are usually spared. A family history may or may not be present. The lesions tend to disappear spontaneously within the first few months or years of the patient's life, although they may persist for many years, as in the cases of Kobner and Thibierge. In McKenzie's case (cited by McDonagh) the lesions were present in brothers all of their lives, and a sister and grandfather were similarly affected. The lesions may superficially resemble those of urticaria pigmentosa, although their firm consistency, lack of urtication, and histologic structure makes a definite differentiation possible. The lipoids in the blood are not increased.

Histologic Features

Nevoxantho-endothelioma is characterized histologically by a densely packed cellular infiltration, in which the predominating type of cell is a large histiocyte with a poorly defined, pale, foamy cytoplasm and a large, oval or irregularly rounded, pale nucleus. The cells may become elongated and thin and may resemble fibroblasts. Large giant cells of the Touton type are encountered, each consisting of a peripheral ring of ovoid nuclei surrounding a pale central cytoplasm. According to Ormsby and Montgomery,[7] foam cells and endothelial giant cells are also seen. Sections stained with Sudan III show the presence of many droplets of lipoids throughout the zone of infiltration as well as within the giant cells.



Fig. 1. Nevoxantho-endothelioma. The patient developed multiple yellowish-brown nodules on the scalp, face, trunk and extremities at the age of six months. Most of the lesions had undergone involution by the time the child was two years of age.

Report of Cases

Case 1.—Baby J. T., aged two months, was first seen on October 15, 1946. Two subcutaneous tumors had been present at birth, one in the left scapular area and one on the posterior surface of the left thigh.

Examination showed a firm, yellowish-brown nodule, 2 cm. in diameter with superficial ulceration, on the posterior surface of the left thigh. The lesion over the scapular region was almost identical in size, color and consistency, except that the surface was smooth. At the request of the parents the lesions were excised. Within a few months several yellowish nodules, 2 to 4 mm. in diameter, reappeared along the scar.

Case 2.—Baby C. C., aged six months, was examined first on February 20, 1947. The parents stated that yellow nodules had appeared on the right side of the neck when the baby was three months of age. Within a month similar lesions appeared on the trunk and both upper and lower extremities.

On examination there were multiple firm, yellow nodules, from 1 to 3 mm. in diameter, scattered over the face, neck, arms, legs and trunk.

Case 3.—Baby G. K., aged five weeks, was first examined on March 14, 1947. The child was born with a few scattered yellowish nodules on the scalp, trunk and extremities. At the time of examination, the parents stated that the lesions seemed to be becoming lighter in color and smaller.

On examination there were scattered, slightly raised, nodular lesions, varying from 0.5 cm. to 2 cm. in diam-

eter, over the forehead, face, right shoulder, left breast, abdomen, scalp, back, forearms and lower extremities. The lesions varied in color from yellow to brownish-yellow and purplish-brown. The lesions on the eyelid simulated xanthoma palpebrarum.

Case 4.—C. P., a male infant aged six months, developed a yellow tumor, 1.5 cm. in diameter, on the right cheek shortly after birth. At the age of two and a half months another similar tumor appeared on the scalp, followed by the development of multiple small lesions on the body.

On examination there were multiple, firm, painless, yellow nodules scattered over the scalp, face and body. The largest lesion was on the right cheek and measured 2.5 cm. in diameter. Roentgenograms of the bones showed no abnormality. The blood lipoids were normal.

The histologic features in all four cases were essentially the same and consisted of a proliferation of the connective tissue and an infiltrate made up of histiocytes, endothelial giant cells, foam cells and Touton giant cells. Sections which were stained with Sudan III showed the presence of lipoid droplets throughout the zone of infiltration.

Comment

There has been considerable confusion concerning the proper classification of nevoxantho-endothelioma. Ewing[3] stated that the diagnosis of endothelioma should be accepted only when the evidence is clear and conclusive, since the group has been used as a "catch-all" for many miscellaneous tumors on which studies have been inadequate. He brought out the fact that several distinct new growths have acquired a wide or general acceptance as endotheliomata, only to lose their claim for recognition in this category through the more careful studies of critical observers.

Arzt,[2] after studying a case of nevoxantho-endothelioma clinically and histologically and after comparing it with other similar cases in the literature, regarded the disorder as a form of juvenile xanthoma.

Sweitzer and Winer,[9] in 1936, maintained that true endothelioma of the skin does not exist, since the origin of an endothelioma must be from endothelially lined structures such as blood or lymph vessels; therefore, the so-called endothelioma of the external surface is either a hemangio-endothelioma or a lymphangio-endothelioma.

In our opinion, the benign course and the tendency toward spontaneous involution completely separate nevoxantho-endothelioma from Letterer-Siwe disease or Schüller-Christian disease. In the latter, systemic involvement is always present and a fatal outcome is the rule. It would seem best to classify nevoxantho-endothelioma as a peculiar and rare type of juvenile xanthoma.

Summary

1. Nevoxantho-endothelioma is an unusual type of juvenile xanthoma, characterized by yellow or reddish nodules present at birth or developing shortly thereafter. The general health is not affected, and there is a tendency towards spontaneous involution, although the lesions may persist for several years.

2. The values for the blood lipoids are normal.

3. The histologic picture is distinctive and consists of a proliferation of the connective tissue and an infiltrate of histiocytes and endothelial giant cells. Foam cells and Touton giant cells are also present. Appropriate stains show the presence of lipoids in the infiltrated areas.

4. Four cases of nevoxantho-endothelioma are reported.

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INGUINAL AND FEMORAL HERNIOPLASTY

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SURGEONS in general are an egocentric group, and an off-hand opinion as to one's hernia recurrence rate is usually to the effect that he has no recurrences. Furthermore, as a young surgeon, it has been my repeated experience that older and more experienced surgeons resent any implication that their varied techniques are anatomically and physiologically wrong. In the evaluation of any group of herniorrhaphies from a statistical standpoint of recurrence, it is important to break the group down into types of hernias repaired. The reporting of a series of herniorrhaphies with a favorable recurrence rate is valueless unless the types of hernias repaired are stipulated. A 2 per cent recurrence rate for the small indirect variety would not be remarkable, but a 2 per cent recurrence rate for the repair of direct inguinal hernias would be phenomenal. As most groin hernias are of the small indirect variety, they serve to bolster or give a false impression of the rate of recurrence in the more difficult hernias. The recurrence rate in the repair of direct inguinal hernias is said by some to be 50 per cent or more.

To the young surgeon, the galaxy of great names associated with inguinal herniorrhaphy and the almost endless number of operations for the cure of inguinal hernias are a baffling introduction to one of the oldest known afflictions of man. I know of sixty-seven recorded operations for the repair of inguinal and femoral hernias, most of which are linked with a proper name. Minor variations on these known operations are legion, and almost every surgeon has a pet trick or two which gives him confidence in his repair. As one reviews the many recorded operations for inguinal hernia, the consistent use of the inguinal ligament as the anchoring structure for the inguinal strata is evident. These numerous operations, then, are all variations upon a central theme. Dr. B. J. Anson and I, in collaboration, have repeatedly presented the anatomy of the inguinal region, demonstrating that the lower inguinal portion of the transversus layer inserts into Cooper's ligament and that there is no attachment to the inguinal ligament; also, that the inguinal ligament is a free margin, loosely held in its slightly concave position by the fasciae. The breadth of the transversus insertion into Cooper's ligament determines the transverse diameter of the femoral ring; or, stated another way, the medial boundary of the femoral ring is the lateralmost attachment of the transversus stratum into Cooper's ligament and not the lacunar ligament, as usually stated.

With these brief introductory remarks I should like to present a concept of the pathologic anatomy of groin hernias and a method for their repair based upon the restoration of inguinofemoral anatomy to normal. For this purpose, groin hernias are divided into two groups. Group I includes only the small indirect inguinal hernias. Group II includes large indirect inguinal, direct inguinal and femoral hernias, or any combination of these, including the small indirect variety.

Group I. Small Indirect Inguinal Hernias

The only pathologic condition present in the small indirect inguinal hernia is a congenital peritoneal diverticulum which passes through the abdominal inguinal ring and extends for a variable distance, intimately associated with the cord structures and within the sheath of the internal spermatic fascia. After opening the sac, the examining finger should be passed into the peritoneal cavity and, by a combination of palpation and inspection, the coexistence of a direct inguinal or a femoral hernia excluded. If the posterior inguinal wall is strong and the femoral ring is closed, the only problem is the removal of peritoneal sac and tightening of the abdominal inguinal ring. The sac is removed after high ligation in a conventional manner, and then the abdominal ring is tightened by one or two sutures which approximate the transversalis fascia to the anterior layer of the femoral sheath, medial to the cord structures. One fine silk suture is usually used to pick up the cord fasciae at several points and attach it to the transversalis fascia to prevent the cord from sliding back and forth through the ring, on the hypothesis that the preperitoneal fat might work its way through the ring and act as an entering wedge for the recurrence of an indirect inguinal hernia.

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The removal of the sac and the closure of the abdominal inguinal ring as just outlined completes the repair of this type of hernia. Since no other pathologic condition exists there is no need for buttressing sutures between the inguinal ligament and the conjoined tendon. The spermatic cord is dropped back against the posterior wall and the external oblique aponeurosis closed over it. Both the subcutaneous and abdominal inguinal rings are closed snugly but not too tightly so that there will be no interference with the blood supply of the testis. A general rule in this regard may be stated that after the closure of these "rings," the tip of the fifth finger should be able to pass through the ring along with the cord structures. For descriptive purposes we call this simple procedure "abdominal ring repair," and it is the most frequently used procedure since most groin hernias are of this type.

Group II. Method of Repair for All Other Groin Hernias

This group includes all other groin hernias or combinations thereof, and a single method for their repair will be outlined. Before discussing this group of hernias and their repair, it is necessary to establish the definition of the posterior inguinal wall. As used by this speaker, it consists only of the transversus abdominis aponeurosis and its investing fasciae which are fused into one layer in this region. The innermost layer of fascia is the transversalis fascia; the outermost is unnamed and thinner, but the spermatic cord and investing fasciae lie upon this fascia as the cord traverses the inguinal canal. The extent of the posterior inguinal wall is roughly delineated by the area known as Hesselbach's triangle, but the base of this triangle has nothing to do with the inguinal ligament. The medial portion of the base of the triangle is the insertion of the transversus abdominis aponeurosis into Cooper's ligament and the lateral portion is the continuity of the transversalis fascia with the anterior layer of the femoral sheath, where the aponeurotic fibers of the transversus layer cease. Medially, the posterior wall passes anterior to the rectus muscle as a component of the rectus sheath. Superiorly and laterally, the layer is muscular with the same investing fasciae. The reason for grouping large indirect inguinal, direct inguinal and femoral hernias under one heading is that they all encroach upon this posterior inguinal wall. The rationale of a single method of repair is that they all represent defects in the same layer, i.e., the transversus abdominis.

A large indirect inguinal hernia encroaches upon the posterior inguinal wall from the lateral side, and the degree of destruction is directly proportional to the size of the dilated abdominal inguinal ring. In the extreme case, the entire posterior wall is destroyed and in attenuated form becomes part of the coverings of the hernial sac. In this large hernia the medial wall of the abdominal inguinal ring lies adjacent to the rectus muscle, and the inferior epigastric vessels lie behind the rectus muscle. The problem of repair is exactly the same as for the diffuse direct inguinal hernia. In the direct inguinal hernia the posterior wall is attenuated over the advancing direct hernial sac.

The mechanism of the destruction of the posterior inguinal wall in the direct and large indirect inguinal hernias is clear to everyone. Just how the femoral hernia compromises the posterior inguinal wall is a little more obscure. The transversus abdominis aponeurosis (posterior inguinal wall) inserts into Cooper's ligament from the pubic tubercle to the medial margin of the femoral ring. Whether a congenitally narrow insertion of the transversus aponeurosis into Cooper's ligament (and a correspondingly broad femoral ring) is the etiologic precipitating factor in a femoral hernia, or whether an established femoral hernia attenuates and narrows this insertion secondarily is not known. The fact remains that the defect to be repaired to prevent a femoral recurrence is to broaden this attachment into Cooper's ligament and close the femoral ring. In passing, it is worthy of note that when the femoral ring is dilated in the presence of a femoral hernia, the medial margin of the femoral ring then is bounded by the lacunar ligament, as stated in the standard textbooks of anatomy. In normal anatomy, however, the medial boundary of the femoral ring is about 1 centimeter lateral to the lacunar ligament, and, as stated before, this medial boundary of the femoral ring is the lateralmost insertion of the transversus abdominis aponeurosis (posterior inguinal wall) into Cooper's ligament.

Therefore the problem in the Group II hernias is a reconstruction of the posterior inguinal wall. When the posterior inguinal wall is destroyed, as in the large indirect and direct inguinal hernias,

all the attenuated aponeurosis and fascia are cut away until a strong superior border of the transversus stratum is obtained. Cooper's ligament is exposed throughout its extent, and the cut margin of the anterior femoral sheath is dissected free over the vessels. In dealing with a femoral hernia the procedure is slightly different, in that there is usually no attenuation of the body of the posterior inguinal wall; therefore, this layer is incised close to Cooper's ligament and the incision carried lateralward over the femoral vessels by incising the junction of the transversalis fascia and the anterior layer of the femoral sheath. This then gives adequate exposure for dealing with the femoral hernia which is pulled out into the position of a direct inguinal hernia; the inguinal ligament may be cut if necessary. All hernial sacs are dealt with in a conventional manner which need not be chronicled here.

From this point on, all three types of hernia in this group are dealt with in an identical manner. The reconstruction of the posterior wall and the closure of the defect is in effect a sliding of the transversus stratum from above where it is strong into place below and suturing it to the normal insertion. So that this transfer may be made easily and sutured without tension, a relaxing incision is made in the rectus sheath. The relaxing incision begins at the pubic crest and extends for 5 or 6 cm. superolaterally, staying as close to the midline as the line of fusion of the external oblique aponeurosis permits. It should be noted that this relaxing incision is made through the fused internal oblique and transversus abdominis aponeuroses (conjoined tendon) and deep to the external oblique aponeurosis, which is separable almost to the midline in this region. When the repair is complete, the fact that this is a relaxing incision is evident by the conversion of a narrow cleft into a triangular defect. This defect is protected posteriorly by the rectus muscle and the medial continuation of the transversalis fascia, the rectus fascia.

The reconstruction of the posterior inguinal wall proceeds in the following manner. The recently cut strong border of the transversus abdominis aponeurosis and fused fasciae is sutured to Cooper's ligament, beginning at the pubic tubercle and continuing lateralward to the femoral vein. Interrupted nonabsorbable sutures are used and placed approximately 2 millimeters apart; none of these sutures are tied until all of these sutures are in position and the following two sutures are in place. The two sutures just referred to accomplish the transition from the deep level of Cooper's ligament to the more superficial level of the anterior femoral sheath. The first of these two sutures will unite the transversalis fascia to the pectineus fascia medial to the femoral vein and at the point where the anterior femoral sheath normally curves posteriorly to be continuous with the posterior femoral sheath. The second of these two sutures will approximate the transversalis fascia to the medialmost extent of the anterior femoral sheath. Now, the sutures are tied in the order in which they were placed, beginning at the pubic tubercle. When all these sutures are tied, the reconstruction of the posterior inguinal wall is completed by suturing the transversalis fascia to the anterior layer of the femoral sheath. This suture line is carried lateralward far enough to make a snug closure of the abdominal inguinal ring, as described under the abdominal ring repair. The spermatic cord is dropped in against the new posterior inguinal wall and the external oblique aponeurosis closed over it.

The line of suture beginning at the pubic tubercle and extending along Cooper's ligament to the femoral vein is the normal insertion of this part of the posterior inguinal wall. The only variation from normal anatomy is that this insertion is broadened to obliterate the femoral ring. The intermediary suture between the pectineus fascia and the transversalis fascia serves to close a small defect that would exist between the two suture levels and has its counterpart in normal anatomy in the fascial limitation of the medial wall of the femoral canal. The suture line which approximates the transversalis fascia to the anterior layer of the femoral sheath re-establishes this normal fascial continuity. In referring to the superior margin which is brought down and sutured first to Cooper's ligament and then to the anterior femoral sheath, two terminologies are used, but it is the same anatomic layer. In general the transversus layer is aponeurosis and fused fasciae where it is sutured to Cooper's ligament; however, lateral to this the layer becomes muscular, and so only the fascia on the deep surface of the transversus muscle (the transversalis fascia) is sutured to the anterior layer of the femoral sheath.

Summary

The detailed anatomy of the inguinofemoral region has been published repeatedly in the past and only pertinent excerpts have been presented in this paper.

A simple method of repair of the abdominal inguinal ring for the small indirect inguinal hernia is presented.

A single operation of reconstruction of the posterior inguinal wall for the repair of large indirect inguinal, direct inguinal, and femoral hernias is presented. It is demonstrated that they are all encroachments upon the continuity of the posterior inguinal wall and therefore logically require the same operative procedure. The operation for these hernias includes the excision of attenuated aponeurosis and fascia, the sliding of a strong superior transversus layer into the defect and suturing this layer to the normal anatomic attachments, i.e., Cooper's ligament and the anterior femoral sheath.

The error of using the inguinal ligament in the repair of any inguinal or femoral hernia is demonstrated.

Discussion

DR. HAMLIN MATTSON: The surgical world is indebted to Dr. McVay for his restudy of the anatomy of the inguinal region based on 500 dissections.

In 1898 Lotheissen, while working on a forty-five-year-old woman who had recurrent inguinal hernia, found the inguinal ligament gone. It was the era of early enthusiasm for the principles advocated by Bassini a few years before. Lotheissen recalled the description of the superior pubic ligament by Sir Astley Cooper in 1804 and sutured the conjoined tendon to it. Dr. McVay has revived this operation.

I encountered a similar situation in a soldier in World War II. The so-called conjoined tendon was flimsy and almost destroyed. I decided to turn back a flap of rectus and pyramidalis muscle, as described by Bloodgood in 1903, for the inguinal ligament. Such an improvisation seemed to fit the situation and worked out very well. While in the service I operated on thirty-five patients, twenty-two of them with direct hernias. For the indirect hernias I opened the cremaster envelope and sutured the transversalis fascia to the fascia of the femoral sheath with interrupted silk around the actual structures of the cord. I have copies of the records of these soldiers and have arranged with them to contact their physicians in due time.

Since returning from the service in 1945 and to date, I have performed seventy-four operations for inguinal hernia. Fifty-seven were indirect and fourteen direct. Of the latter, three were recurrent. All have been done according to the methods indicated above. I hope to carry out a five-year physical examination follow-up on these patients. Most follow-up studies in the literature have been by letter, and the usual period has been eighteen months to two years.

DR. MCVAY: I certainly am indebted to Dr. Mattson for his staunch support for the use of Cooper's ligament rather than the inguinal ligament in inguinal herniorrhaphy. His use of the rectus and pyramidalis flap gives a strong posterior wall when sutured to Cooper's ligament, but it changes the direction of the transversus fibers and it leaves a larger defect over the rectus muscle than the simple relaxing incision and the sliding of the layer as described by Rienhoff. However, this objection may be only theoretical, and I know of other surgeons who are using the rectus flap in their Cooper's ligament repair.

DR. HAMLIN MATTSON: Early in my experience with the rectus flap I noticed separation at the hinge in some cases. Subsequently I have added a suture line at the hinge between the flap and the tendinous insertion of the rectus muscle.

DR. CARL O. RICE: We have come to the conclusion that there are only six or eight fundamentally different operative procedures designed for the repair of inguinal hernias. Most of these fundamental procedures aim to narrow the internal ring, reinforce the floor of the canal, and change the contour of the inguinal canal.

Bassini did this by approximating the conjoined tendon to Poupart's ligament under the cord. Bloodgood did it by pulling a portion of the rectus muscle down to this structure. Later a flap of rectus sheath was turned down and anchored to the inguinal ligament. Andrews employed the fascia of the external oblique for this purpose, imbricating one leaf under and the other over the cord. Ferguson in his first procedure sutured all of the inguinal structures over the cord, and in his second procedure brought the cord out at the inguinal ring, imbricating the external oblique and conjoined tendon all under the cord. McArthur designed the fascial strip from the locally available external oblique fascia, using these as suture material for any type of procedure which he chose to use. McVay has popularized the use of Cooper's ligament as the anchoring point.

Mattson of this society has devised a procedure in which he brings a flap of rectus sheath over the conjoined tendon, suturing it to the Cooper's ligament. Giving credit to the originators of each principle, I prefer to call this a Bloodgood-McVay procedure. Likewise, I should prefer to call other combinations by the name of the originator of each particular principle.

In reviewing the operative procedures at the St. Barnabas Hospital, we have seen described combinations of a number of different procedures, and I presume that almost every surgeon has a special modification which he has adapted to his own use.

I employ a combination of the McArthur, McVay, and Bassini procedures, using the McArthur fascial strip for suture material. Two of these strips are left attached at the pubic tubercle, and one at the muscle end. With the first strip the transversalis fascia is sutured to

Cooper's ligament, thus reinforcing the approach to the floor of the inguinal canal, over which a direct hernia must pass before it can force itself out through the floor of the canal. The additional portion of this strip or the second strip approximates the conjoined tendon to Poupart's ligament (Bassini), and closes the roof of the canal over the cord in its distal third. The third strip, attached at the muscular end, closes the rent in the lateral portion of the external oblique fascia, thereby restoring the anatomical relationship of the cord and inguinal canal.

DR. McVAY: I made no special reference to suture material other than the fact that I use non-absorbable sutures. My objection to fascial sutures is that the usual fascial suture needle is so large that damage may be done to the transversus layer in making the closure. Cooper's ligament is certainly thick and strong enough to withstand any size needle or suture.

DR. L. C. CULLIGAN: I know of no speaker before the Minneapolis Surgical Society who has provoked so much discussion and argument as Dr. McVay has. I think that is an indication of the keen interest every surgeon has in the problem of hernia. However, it is safe to say that no matter which side of the argument we may take, we are all agreed that Dr. McVay has made his mark in the literature of hernia and that his name will go down with Bassini, Halsted, McArthur, Ferguson and others who have contributed much to our knowledge of this subject.

If Dr. McVay is correct in his thesis that Poupart's ligament is a weak structure and inadequate for use in the repair of inguinal hernia, he has certainly brought something new. I know that Dr. McVay will be the first to admit that his type repair is more difficult than the usual repair, because in doing it one has to work in a deeper hole. In the fat person, who is especially prone to direct hernia, it has definite technical disadvantages. Also, it is more hazardous, in that one must work close to the femoral vessels and there is real danger of injuring these large vessels. There is more tension involved in suturing in view of the fact that Cooper's ligament is deeper than Poupart's ligament. So, if Dr. McVay's operation is to survive, these disadvantages must be offset by real dividends in lower recurrence rates. What this will be, only time alone can tell. It will be years before accurate statistics will be available to settle this question.

When I heard of Dr. McVay's coming, I talked to Dr. Carlyle, who is now studying the hernias operated at the Veterans' Hospital. I estimate that 5,000 hernias have been done there in the past twenty years, so this should prove to be a fruitful study. About 2,000 of these should be the McArthur type of fascial repair. We started this very type of repair in 1934 and used it almost routinely in all direct and large indirect hernias.

We thought that we could throw some light on the problem of whether or not the McVay type of repair is necessary by making a study of all the recurrent hernias that had been operated there during a ten-year period from 1936 to 1946. To do this we got out all the records of patients with recurrent hernias operated on and also all the patients with femoral hernias admitted to the hospital during the same period. In this way we were able to study 150 recurrent hernias and determine fairly definitely the point of recurrence. There were sixty patients admitted with femoral hernias during this period. Eight of these had previously been operated on for inguinal hernias on the same side. Combining these two groups, the 150 recurrent hernias and the eight femoral hernias which had previously had inguinal herniotomies, we were able to study 158 hernias. Of this group 35 per cent had recurred in the region of the internal ring, 36 per cent came back in the floor of the canal, 23 per cent at the pubis, and 5 per cent had developed a second hernia in the femoral canal. From this study it would appear that there are relatively few inguinal hernias which recur in the region of the femoral canal.

DR. McVAY: Dr. Culligan has presented a most interesting analysis of recurrences at the Veterans' Hospital. My experience is too limited for me to express an opinion upon the sites of recurrence, but in my personal series of 100 herniorrhaphies, twelve were recurrent hernias. Of these, three were indirect, seven direct, and two were femoral recurrences. I am interested to learn that the slide which Dr. Culligan presented, which shows the inguinal wall in posterior view, was taken from a text, because it demonstrates an artifact that has been perpetuated in the standard texts and atlases of anatomy. If, as this slide demonstrated, one can see the inguinal and lacunar ligaments in a posterior view of the inguinal region, then the transversus layer (posterior inguinal wall) and its insertion into Cooper's ligament has been removed.

Dr. Culligan is quite correct that it is more difficult to suture to Cooper's ligament than to the inguinal ligament, especially in a fat subject. However, with a little practice, especially by holding the preperitoneal fat down with a ribbon retractor, the operation is not difficult. On the contrary, danger of injury to the femoral vein is less likely in the Cooper's ligament repair because it is exposed in each instance and the surgeon knows exactly where it is at all times. I am sure many surgeons do not realize how close their needle comes to the femoral vein in the conventional inguinal ligament repair. Only the anterior femoral sheath separates the femoral vein from the inguinal ligament. In carrying out the lateral part of the reconstruction operation, in which the transversalis fascia is sutured to the anterior layer of the femoral sheath, the femoral vein is visualized during the placing of every suture. I should add that when difficulty is experienced in delineating the edge of the anterior femoral sheath, I frequently doubly ligate and cut the small veins which enter the external iliac or femoral vein at this point. I have had some cases of annoying bleeding when I have not done this when the veins were adherent to the sheath.

DR. O. H. WANGENSTEEN: The writings of Dr. McVay and his former associate, Professor B. J. Anson, on the anatomy of inguinal hernia are well known and

constitute an important contribution to our knowledge of hernia. Dr. McVay would have us believe that, in the repair of an inguinal hernia, it is necessary to take steps to prevent the occurrence of femoral hernia as a consequence of, or sequal to, repair of the inguinal hernia. This suggestion is not in accord with the experience of Dr. Culligan nor with our own. Dr. Donald Ferguson has just recently completed a study in our clinic of 191 patients operated upon for inguinal and femoral hernia. These patients were operated upon between January, 1940 and June, 1944, so that a period of more than three years has elapsed since the most recent operations. Of 151 patients in the group undergoing operation for inguinal hernia, in only one instance was the recurrence a femoral hernia. In other words, the problem in the repair of an inguinal hernia is the prevention of recurrence of inguinal hernia, not femoral hernia. As the studies of Dr. McVay and his associate, Professor Anson, have shown, the tethering of the inguinal ligament to the structures beneath is by no means strong; on the contrary, the attachment is surprisingly weak. Nevertheless, the nature of the fixation of the inguinal ligament between the anterior superior spine and pubic tubercle, despite its weak attachment to underlying structures, must be such as to constitute a satisfactory buttress, protecting against dissection of a hernia beneath Poupart's ligament lateral to the lacunar ligament.

Dr. Ferguson's study indicated that, in our own experience at least, the chief problem in the repair of inguinal hernia is recurrence of inguinal hernia. Dr. Ferguson found that the over-all recurrence rate following the repair of inguinal hernia in our clinic was approximately 10 per cent—a rather disconcerting observation; for indirect inguinal hernia, the incidence of recurrence was 7 per cent, for direct hernia 30 per cent! When Dr. Ferguson told me this, I thought this high recurrence rate must be owing to the circumstance that a number of the operations were done by the junior staff. Dr. Ferguson informed me, however, that such was not the case. The larger number of recurrences were to be found amongst patients operated upon by the senior staff. Of the twenty-seven patients operated upon by me, one had a recurrence. This was a seventy-nine-year-old man who was blind, who had bilateral direct and indirect inguinal hernias—the direct hernia on each side being the more important item. The recurrence in this patient was at the site of the internal ring on the side of the smaller hernia. In other words, the failure in this instance was in that component of the hernia (indirect) which should have been more easily dealt with. The conclusion therefore is inescapable, namely, I did not take as careful pains as I should have in dealing with that portion of the problem which should have been most readily resolved.

Dr. Ferguson's study indicated that our staff as a whole was partial to the Bassini operation. The operations performed by me were of the Halsted type I. As you will remember, Professor Halsted described two types of procedures; in the first, the cord was transplanted subcutaneously with complete obliteration of the external ring. After a few years, Halsted abandoned this procedure, reverting essentially to the Ferguson operation without transplantation of the spermatic cord—the latter structure being brought out through the abdominal wall just above the pubic tubercle. In this latter type of operation (Halsted type II), the internal ring is completely obliterated.

The whole problem of inguinal hernia centers about the circumstance that the spermatic cord comes through the abdominal wall. Moreover, in the repair of the hernia, the surgeon must make some provision for the spermatic cord, at the same time trying to make a strong repair of the abdominal wall. In recurrent hernias the surgeon may divide the spermatic cord high up, thereby permitting him to make a complete closure of the structures of the abdominal wall. It is perhaps unnecessary to suggest that this expedient simplifies the problem considerably, and in the repair of difficult recurrent or sliding hernias most of us at some time or another have taken advantage of this maneuver to augment the chances of a satisfactory cure of the hernia.

The first important step in the repair of an indirect inguinal hernia is removal of and satisfactory closure of the sac. Closure with a purse string suture is rarely adequate. And certainly a broad sac should never be closed in this manner. The placement of a generous number of interrupted sutures of fine silk is just as important here as in the closure of any abdominal incision. I think it would not be an overstatement to suggest that many recurrences in indirect hernias are due to failure to obtain adequate closure of the peritoneal defect.

Now with reference to the hernioplasty, I believe the Bassini operation should be abandoned because it leaves the surgeon and the patient with the problem of maintaining both internal and external rings. Only sacrifice of the spermatic cord resolves the problem in such a manner that both internal and external rings are done away with. In the Halsted I operation, the internal ring is left and the external ring is closed; in the Halsted II or Ferguson type of procedure, the internal ring is closed and the external ring is preserved. Whereas my own personal experience with the Halsted operation has been entirely with the type I operation, I believe that inasmuch as it obliterates the external ring, this procedure is especially suitable for direct hernias; similarly, inasmuch as in the type II procedure, the internal ring is closed, this operation should be particularly suitable for indirect hernias. The problem of making provision for the spermatic cord in the repair of an inguinal hernia is essentially the same problem as making a colostomy with avoidance of an incisional hernia. Only the careful preplacement of interrupted silk sutures uniting parietal peritoneum and gut wall can prevent hernia at the site at which the gut comes through the abdominal wall. This important matter cannot be left to chance, otherwise incisional hernia will occur about the colostomy. And such, too, is the problem in inguinal hernia.

I hesitate to inflict these elementary considerations relating to inguinal hernias upon you. Yet I must confess that it was a feeling of unwillingness to see the con-

ventional procedures for the repair of inguinal hernias set aside that prompted me to attempt some defense of them. It was a real pleasure to have had the opportunity of hearing Dr. McVay and to learn something of his enthusiasm for attaching the fascial structures of the lower abdominal wall to Cooper's ligament. Following the example of Lotheissen of Vienna, most of us have employed this scheme in the repair of femoral hernias. As Dr. McVay suggests, this maneuver strengthens the lower abdominal wall. The question is, is it necessary in the repair of inguinal hernia? The primary problem of recurrence after repair of inguinal hernia, as I see it, is failure to deal satisfactorily with the spermatic cord. I am hopeful that when Dr. McVay has had the opportunity to enlarge surgically upon his nice anatomical studies of the problem of hernia, he too will find some things worth salvaging in the conventional surgical methods for the repair of inguinal hernia.

Dr. McVay: I must agree with Dr. Wangensteen that my surgical experience is not commensurate with my anatomical experience. However, let me reiterate two anatomic facts that are violated in the Halsted I operation. First, the inguinal ligament is the anchoring structure, when the normal insertion is into Cooper's ligament medially and the lateral continuity is with the femoral sheath. Second, the Halsted I operation violates normal anatomy in changing the obliquity of the inguinal canal to one of direct emergence. There are many statistical analyses of herniorrhaphies showing excellent results but these are worthless unless the hernias repaired are listed as to type. The primary purpose of my paper tonight is to present a method of hernioplasty which repairs the defect and returns the inguinal anatomy to normal.

Dr. S. E. Williams, Chippewa Falls, Wis.: I am not a member of the Minneapolis Surgical Society, but, through kindness, was invited here. I have driven 100 miles tonight to hear this Dr. McVay speak.

This is a very interesting subject. I am looking back on forty-three years, and I think I am, along with my friend in the front seat, one of the old timers. I have spent a good share of my forty-three years of practice in a rural district in Wisconsin and have operated on a number of people for hernia. Very few of our farmers and lumberjacks developed recurrences. Dr. A. J. Ochsner taught us that the simpler you did the hernia, the longer it would last. Surgeons at Augustana hospital in Chicago have abandoned silk, wire, and linen and for the past ten years have used only catgut. They have been getting fewer recurrences with catgut. Babcock of Philadelphia states that none of his cases in which he used wire developed recurrences. I can give you the names of eleven doctors in Saint Paul today who are wearing trusses following operations by some of you. There may be more in Minneapolis.

Dr. McVay: Dr. Williams has made an excellent point, which is "the simpler you do a hernia, the better." As I stated at the beginning of my paper, the small indirect inguinal hernia needs only to have the peritoneal diverticulum removed and the abdominal inguinal ring tightened. Any additional imbricating, plicating or other sutures are not only superfluous but may damage the posterior inguinal wall so as to cause a direct or femoral recurrence. The repair of a direct inguinal or large indirect inguinal hernia is an entirely different matter, and it is in this group that the incidence of recurrence is so high. It is in this latter group that reconstruction of the posterior inguinal wall is indicated.

Dr. A. E. Benjamin: I began surgery when one could not depend upon the suture material for hernias. We had a great deal of trouble with catgut or whatever material was used. I decided not to depend upon buried sutures. I thought it was important to build the posterior wall of the canal solidly. I put in retention sutures of silk-worm gut. I first included the external oblique, internal oblique and transversalis with mattress sutures brought through the muscles and conjoined tendon and through the shelving edge of Poupart's ligament. I was very careful to ligate the sac high and to run my finger around to see if there were any adhesions, any fat tissue to be removed, or if a direct or femoral hernia was present. I tied the mattress sutures over rolls of gauze on the skin. That made an elastic sling which allowed no cutting of sutures through the tissues. I got the patients out of bed early. In 1908 I wrote a paper on "The Ambulatory Treatment of Hernia Cases." Some patients were sent home the first day. Occasionally I would keep them in the hospital two weeks. Few surgeons have tried this method, but its continued use in my hands has been justified. The nonabsorbable sutures tied loosely over gauze rolls made it possible for patients to get around early with no danger of sutures giving way. I took the sutures out at the end of two or three weeks. Usually I would bring the external oblique beneath the cord and make one point of exit of the cord. Later, when I could depend upon the catgut, I used fine chromic catgut, No. 0 or 00, to reinforce the suture line. I imbricated the external oblique. I have operated on a femoral hernia at the same time as a direct, or a direct and an indirect simultaneously. If there is no other undiscovered hernia left, there is less chance of a recurrence. Usually I transplanted the stump of the sac with a suture through the internal oblique and fastened it over the fascia of the external oblique. I think transplantation of the sac is very important for some of the cases.

In patients with pot bellies, intra-abdominal pressure is too great, and may result in a return of the hernia. I have used Cooper's ligament of late. I did not know I was using it years ago, but in retrospect, I do think it was incorporated in some of the sutures. I got down deep on the inguinal ligament. If these fat patients are given exercises after the operation, and cut down on their diet, I believe we will have fewer recurrences.

Dr. McVay: Dr. Benjamin has emphasized a very important point, namely, that in the repair of any type of groin hernia, be sure that there is not another type of

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ADRENAL SYMPATHOBLASTOMA (NEUROBLASTOMA)

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and

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TUMORS of the sympathetic nervous system are occasionally seen in the practice of ophthalmology. The medullary portion of the suprarenal gland is the site of a comparatively rare group of tumors, one of which is the sympathetic neuroblastoma or sympathoblastoma. These growths constitute a definite clinical entity seen almost entirely in infants and children and always terminate fatally. Burch[2] reported it was seen occasionally in adults. The disease is relatively infrequent. A summary of the literature up to 1933 disclosed only 158 reported cases.[9] In 1938, 105 more cases were collected by another group which brought the total, with their cases, up to 270. In 1942 Bothman and Blankstein[1] reported four cases. In the same year Thompson[10] reported three more cases. Moore and Gildersleeve[7] reported a case in 1943. Grier[5] added a case in 1944. Cox[4] added a case in 1948.

The clinician will see a case of ecchymosis of one or both lids, bluish discoloration of the temporal region with a definite palpable mass, exophthalmos, papilledema and roentgenological evidence of bone destruction in the skull with separation of the sutures and involvement of the long bones. Other findings are palpable masses in the abdominal cavity, rapidly increasing in size. Anemia, cachexia and weakness rapidly follow. The disease progresses, and death occurs in a few months. The average length of life after the onset of the first signs is a little over four months. The occurrence of ecchymosis of one or both lids alone or associated with exophthalmos should be enough evidence to establish a tentative diagnosis.

Although the great majority of sympathoblastomas arise from the medullary portion of the adrenal gland, other points of origin have been reported. Chandler and Norcross[3] reported, in a review of the literature, cases originating in the scapula, cervical sympathetics, mediastinum, thoracic cavity, sacrum, retroperitoneal region, abdominal sympathetic trunk, jejunum, intervertebral foramen and the skin of the thigh.

Some have divided these tumors into a group first described by Pepper,[8] who emphasized the adrenal origin, the metastasis to the liver and the early age of onset. The Hutchinson[6] type occurred in a somewhat older group and showed metastasis to the skull, orbits and long bones. Actually these two types are indistinguishable histologically and are an arbitrary division based on the point of metastasis.



Fig. 1. A case of sympathoblastoma.

The adrenal medulla in these tumors is soft, lobulated and highly vascular, depending on the degree of the hemorrhage.

Wright[11] in 1910 described these tumors histologically and showed their resemblance to cells of the sympathetic nervous system. The presence of highly undifferentiated round cells resembling lymphocytes, with the frequent tendency to formation of rosettes and the presence of fibrillae, is characteristic. It could often be confused with other highly undifferentiated neoplasms such as lymphosarcoma and round cell sarcoma when diagnosis was made from biopsy alone.

The following case report is presented as an addition to the literature (Fig. 1).

Case 1.—T. R., a year and a half of age, was first examined by one of us (E.A.L.) on April 28, 1948. His mother, a graduate nurse, reported that two weeks previously she had noticed a swelling over his left eyelid. There was exophthalmos and proptosis downward. The conjunctiva was normal. Pupillary reactions and fundus examination were normal, with no papilledema. The true diagnosis was not even considered at this time.

The patient was sent to a radiologist for x-ray examination of the orbit and skull, which were found normal.

Read at the spring meeting of the Winona County Medical Society.

Laboratory findings were also negative, with exception of considerable elevation of cerebrospinal pressure.

On May 2, a biopsy was taken from the mass in the orbit, and the pathologist's report was sympathoblastoma. An x-ray of the adrenals showed a mass over the left kidney in the lumbar region. This helped to verify the diagnosis of metastatic sympathoblastoma from the adrenal gland. The child became progressively worse and died in October, 1948. Permission to perform an autopsy was not obtained.

Summary and Conclusion

A case of sympathoblastoma in a young child is presented, along with the diagnostic points to be encountered. A partial summary of the literature has been given. These cases are characterized by exophthalmos, edema of the lids, rapid downhill course clinically and fatal termination in all cases. Microscopically the presence of small round cells, highly undifferentiated, rosettes and fibrillae are diagnostic.

Ecchymosis with proptosis in one or both eyes in children, should arouse suspicion of adrenal neoplasm.

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INGUINAL AND FEMORAL HERNIOPLASTY

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hernia present. Certainly the overlooking of a coexistent hernia accounts for some of our recurrences. I spend considerable time dissecting the peritoneal sac well above the fascial abdominal ring and do not feel that transplantation of the neck of the sac is necessary. If the peritoneal sac is adequately freed-up, the ligated neck should retract at least 2 centimeters above the fascial abdominal inguinal ring.

Dr. D. C. McKinnon: Recently the iliopubic tract has been described as a thickening of the transversalis fascia in the upper portion of the femoral sheath parallel and posterior to the inguinal ligament. It has been utilized in Dr. McVay's third phase of the repair by other surgeons. After suturing the transversalis fascia to Cooper's ligament, the transversalis fascia was sutured to the iliopubic tract lateral and anterior to the femoral vessels. Since Dr. McVay has performed so many anatomical dissections, I wish to ask him how often he finds the iliopubic tract present as a definite structure?

Dr. McVay: The iliopubic tract is a thickening of the preperitoneal connective tissue over the femoral vessels and is actually a part of the internal femoral sheath. It is always present but is not to be confused with the external femoral sheath which is a parietal or muscular fascia, e.g., in this instance, the transversalis fascia. It is the continuation of the transversalis fascia into the thigh, the anterior layer of the femoral sheath that I use in the lateral part of the reconstruction of the inguinal wall. Practically, we are perhaps talking about the same structure with different names, as is so frequently the case. Different names for the same structure or different layers with the same name have caused much of the confusion that exists today.

Dr. L. H. Fowler: If the inguinal ligament is not a satisfactory structure to suture the transversalis fascia to, why don't we get more recurrences as femoral hernias?

Dr. McVay: The only way in which I can answer Dr. Fowler is by indirection. In my personal series of 100 hernias, of which twelve were of the recurrent type, two were femoral by virtue of their relationship to the inguinal ligament. Actually they were direct inguinal hernias as far as their relationships to the pubic tubercle and femoral vessels were concerned, the inguinal ligament having been pulled superiorly. It usually is difficult to determine the exact relationships in a recurrent direct inguinal hernia, but I have had the experience and heard others, including Dr. Mattson this evening, state that they have not found sufficient inguinal ligament remaining to do a conventional inguinal ligament repair. My principal objection to the use of the inguinal ligament is, of course, that it is not the normal insertion of the transversus layer and therefore should not be used when the normal insertion is infinitely stronger and readily available.

In closing, I wish to express my appreciation to the Minneapolis Surgical Society for the privilege of presenting my views on the subject of inguinal hernia repair. I have of necessity omitted many details of the anatomy of the inguinofemoral region and have gone over the operative procedure rather rapidly. I have also made some rather broad provocative statements intentionally to stimulate the audience to discussion. From the number of queries and opinions expressed it is obvious that the ancient affliction of hernia is still a very live subject, and I am delighted with the enthusiastic response in discussion.

LABORATORY STUDIES OF CEREBROSPINAL FLUID IN MENINGITIS AND POLIOMYELITIS

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THE advent of specific antibiotics for the different bacterial types of meningitis makes the laboratory means of establishing the etiology of inflammation in the central nervous system indispensable to proper therapy.

The purpose of this paper is to determine the diagnostic value of various common laboratory procedures through a review of the cerebrospinal fluid findings in the cases of meningitis and poliomyelitis admitted to this hospital from 1938 through 1947. Wherever practical, our findings will be compared with the larger series of Merritt and Smith.[1]

During this eleven-year period, a total of 167 cases were clinically diagnosed as poliomyelitis and 110 as meningitis. The cases selected for this study had to meet the following criteria: (1) well-defined clinical symptoms, (2) adequate cerebrospinal fluid and bacteriologic studies, and/or (3) confirmation by necropsy examination.

On the bases of the foregoing, ninety-six (87.3 per cent) of the cases clinically diagnosed as meningitis and 122 (73 per cent) of the cases of poliomyelitis were selected for the review. A plausible explanation for the lower percentage of selected cases of poliomyelitis lies in the fact that mild or abortive symptoms during an epidemic may have been considered sufficient evidence to make the diagnosis, but physical findings and cerebrospinal fluid studies in our opinion were inadequate to confirm the clinical impression.

This selected group study will be reviewed from the standpoint of: bacteriology, total cell and differential cell counts, and quantitative protein, chloride and sugar determinations.

Bacteriology

Our selection of culture media depends upon the other cerebrospinal fluid findings. If we suspect an acute bacterial meningitis and cannot find the organism in smears after concentration by means of centrifugation, we use multiple media suitable for either Hemophilus influenza, Neissera intracellularis or anaerobic streptococci. These media include brain broth, blood agar and chocolate agar. Half of the inoculated plates and tubes are incubated in a carbon dioxide atmosphere. If we suspect a tuberculous meningitis, the fluid after concentration by centrifugation or the pellicle, if present, is streaked on slants of Petragnani's and Hohn's or Wooley's media.

TABLE I. CAUSATIVE ORGANISM

Organism	Number	Percentage
N. intracellularis	37	51.3
Pneumococcus	17	23.6
H. influenza	11	15.3
Streptococcus	5	6.9
Staphylococcus aureus	2	2.8

In our series of seventy-two cases of acute purulent meningitis (Table I), N. intracellularis accounted for 51.3 per cent, pneumococcus for 23.6 per cent, H. influenza for 15.3 per cent, streptococcus for 6.9 per cent, and Staphylococcus aureus for 2.8 per cent. In 88.9 per cent of these cases, the organism was identified by culture methods, and of these, 9.7 per cent were postmortem examinations. In 11.1 per cent, smears alone were considered sufficient. In Merritt and Smith's series of 163 cases of acute purulent meningitis, the causative organism was meningococcus in 39.3 per cent, pneumococcus in 25.2 per cent, streptococcus in 23.9 per cent, Staphylococcus aureus in 7.9 per cent, and the influenza bacillus in 3.7 per cent of cases.

In our series of fifteen cases of tuberculous meningitis, six had pulmonary involvement, eight had a miliary form of the disease, and one patient had osseous tuberculosis. A pellicle formation, although not pathognomonic, was present in 66.6 per cent of cases. In no case was a positive culture obtained, which illustrates the importance of the other cerebrospinal fluid studies for differentiating tuberculous from the other types of meningitis.

Cell Counts

It is generally agreed that a predominance of neutrophiles and a high total cell count favor a diagnosis of acute purulent meningitis, while a

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predominance of lymphocytes and a relatively low total cell count favor either poliomyelitis, tuberculous, syphilitic or viral meningitis. We hoped to find a more exact rule of differentiation.

In our series of seventy-two cases of meningitis due to bacteria other than M. tuberculosis (Table II), 2.8 per cent had a total cell count of under 100 per cu. mm., and 6.9 per cent ranged from 100 to 1,000. In 75 per cent of the cases, the count ranged between 1,000 to 10,000, and in 12.5 per cent, between 10,000 to 20,000. The neutrophiles ranged from 38 to 100 per cent of the total cell count, with an average of 91.9 per cent.

It has been our contention that a spinal fluid differential cell count level of 15 per cent lymphocytes could be used as one of the diagnostic means of differentiating the acute purulent meningitides from other inflammations of the central nervous system. On the basis of the foregoing, we found that only six (8.3 per cent) of our cases of acute purulent meningitis had a lymphocyte count above 15 per cent of the total cell count.

In Merritt and Smith's series of 152 cases of acute purulent meningitis, only 1 per cent showed a cell count of under 100. In 12 per cent of the cases, the count ranged from 100 to 1,000, from 1,000 to 10,000 in 72 per cent, and from 10,000 to 20,000 in 16 per cent. The neutrophiles constituted from 90 to 95 per cent of the total.

Two cases in our series of meningococcus meningitis had a cell count of under 100, which was the result of an examination of the fluid during the first few hours of the disease.

In our series of fifteen cases of tuberculous meningitis (Table II), the cell count ranged between 50 and 500 in 86.8 per cent. The highest total cell count was 1,340 per cu. mm. The lymphocytes ranged from 72 to 98 per cent of the total cell count, for an average of 89.3 per cent. In the Boston series of eighty-four cases, the cell count was between 5 and 25 in 1 per cent, between 25 and 50 in 5 per cent, between 50 and 500 in 85 per cent and between 500 and 2100 in 9 per cent of the cases. The lymphocytes predominated and averaged 80 per cent of the total cell count.

The cell count in poliomyelitis varies with the stage of the disease and is highest in the preparalytic stage. As the disease progresses, there is usually a rapid drop. The neutrophile is frequently the predominate cell in the very early stage but is rapidly replaced by the lymphocyte.

TABLE II. CELL COUNT

Acute Purulent Meningitis	Cells Per Cubic Millimeter				
	Under 100	100 to 1000	1000 to 10,000	10,000 to 20,000	Over 20,000
Meningococcus	2	1	27	6	1
Pneumococcus	0	0	16	1	0
Influenzal	0	3	7	0	1
Streptococcus	0	1	2	2	0
Staphylococcus	0	0	2	0	0

	5 to 25	25 to 50	50 to 500	500 to 1,340
Tuberculous Meningitis	0	1	13	1

	0 to 10	10 to 50	50 to 200	Over 200
Poliomyelitis	19	39	56	8

In our series of 122 cases of poliomyelitis (Table II), 32 per cent had a total cell count of between 11 and 50 and 46 per cent between 50 to 200. The highest total cell count was 530 per cu. mm. The lymphocyte count varied from 5 to 100 per cent of the total cell count, with an average of 60 per cent. In only three (3.3 per cent) of the cases was the lymphocyte count below 15 per cent of the total cell count. The rather unexpected high average percentage of neutrophiles, we believe, reflects the frequent predominance of the neutrophile in the very early stage of the disease. It also illustrates the importance of repeated spinal punctures. There is no proof that repeated punctures produces a pleocytosis as the result of meningeal irritation.

In the Boston series of 109 cases of poliomyelitis, approximately 80 per cent of those punctured within the first five days of the onset showed a predominance of lymphocytes. In the same series, 33 per cent of the cases showed a cell count between 11 and 50, and 45.9 per cent between 50 and 200, with 5.5 per cent between 0 to 10, and 15.6 per cent with a total cell count of over 200.

Protein

An increase in the total amount of protein in the cerebrospinal fluid is probably the most frequent change encountered with diseases of the brain or its meninges.

The normal quantitative protein varies between 15 and 45 mg. per 100 c.c. and for all practical purposes consists of albumin and globulin in a ration of 5 to 1. An increased protein is usually associated with a pleocytosis. Even slight traces

TABLE III. PROTEIN

Acute Purulent Meningitis	Mg. per 100 cc.			
	Under 45	45 to 100	100 to 500	500 to 1000
Meningococcus	2	6	29	0
Pneumococcus	0	3	13	1
Influenzal	0	3	8	0
Streptococcus	0	1	4	0
Staphylococcus	0	1	1	0

Tuberculous Meningitis	Under 45	45 to 100	100 to 500
	0	1	14

Poliomyelitis	45 or less	45 to 75	75 to 100	100 to 500
	55	48	12	7

of blood will cause an increase in the protein content. With an increase in the total protein there is an increase in the globulin fraction, which is the basis for the commonly used rough qualitative tests. The Pandy and Nonne tests are not to be depended upon between the levels of 50 and 100 mg. The quantitative protein determination is a more accurate and valuable clinical aid. A slight increase is common, but a total of over 500 mg. is rare and is seen only in meningitis, cord or brain tumor, bloody fluids and occasionally in polyneuritis. The presence of serum in the transudate, or extravasated blood, as well as a subarachnoid block, will cause an increase in the total protein. An increased protein associated with a pleocytosis is seen in meningitis, neurosyphilis and in the early stage of poliomyelitis. In cases of cord or brain tumor, polyneuritis and in the late stages of poliomyelitis, an increased protein without a pleocytosis is common.

In our series of seventy-two cases of acute purulent meningitis (Table III), 2.8 per cent had a total protein of under 45 mg., while 19.5 per cent ranged between 45 and 100, with 76.4 per cent between 100 and 500, and only one case showed a protein of over 500 mg. 100 c.c. A total of 97 per cent of our cases had an elevated total protein. In Merritt and Smith's series of 157 cases, the total protein was under 45 mg. in 2 per cent, while 12 per cent ranged between 45 and 100 mg. In 64 per cent of the cases it ranged between 100 and 500, with 14 per cent between 500 and 1,000, and between 1,000 to 2,000 mg. in 8 per cent. A total of 98 per cent of their cases had an elevated total protein.

In our series of fifteen cases of tuberculosis meningitis (Table III), the total protein ranged from 87 to 456 mg. per 100 c.c. with an average of 183.6. In the Boston series, the quantitative protein content in 253 fluids ranged from 25 to 1,142 mg., with an average of 200. In this same series, 99 per cent showed an increased protein.

The total protein in poliomyelitis may be normal in the early stages, but as the disease progresses, there is usually an increase for at least the first two or three weeks. In our series totaling 122 cases (Table II), the total protein ranged from 12 to 207 mg., with an average of 52.6. In 45 per cent the total protein was 45 mg. or less, with 39.4 per cent ranging from 45 to 75 mg. per 100 c.c. In comparison, the total protein in the series of Merritt and Smith, totaling 158 cases, ranged from 12 to 366 mg., with an average of 70. The total protein was 45 mg. or less in 46.7 per cent, between 45 and 75 in 27.8 per cent, between 75 and 100 in 10.1 per cent and between 100 to 500 in 15.4 per cent.

Chlorides

The concentration of chlorides in the cerebrospinal fluid is directly related to that of the serum, being usually decreased in the latter with fever or vomiting, and increased with renal impairment. The normal cerebrospinal fluid ranges from 695 to 762 mg. per 100 c.c., with an average of 726. An increase in the protein content of the cerebrospinal fluid is accompanied by a decrease in the difference between the serum and cerebrospinal fluid chloride. This is in accordance with Donnan's equilibrium theory. In addition, a decreased serum chloride as the result of fever and an increased acidity of the cerebrospinal fluid due to bacterial metabolism may also play a role in decreasing the spinal fluid chloride.

In our series of seventy-two cases (Table IV) of acute purulent meningitis, the chloride content varied from 344 to 843 mg., with an average of 668. In 15.3 per cent of cases it was over 700, in 15.2 per cent 600 or under, and 600 to 700 in 69.3 per cent. In the series of Merritt and Smith, totaling 139 cases, the chloride content ranged from 532 to 760 mg. per 100 c.c. with an average of 649. In 10 per cent of the cases it was over 700 mg., in 14 per cent 600 or under, and 600 to 700 in 76 per cent of cases.

The reduction of chlorides is greatest in tuberculous meningitis, and in our series of fifteen cases (Table IV) it varied from 492 to 698,

TABLE IV. CHLORIDE

Acute Purulent Meningitis	Mg. per 100 c.c. 344 to 550	550 to 600	600 to 650	650 to 700	700 to 843
Meningococcus	2	3	21	5	6
Pneumococcus	1	2	7	5	2
Influenzal	0	0	7	1	3
Streptococcus	0	2	3	0	0
Staphylococcus	0	1	1	0	0

	Below 500	500 to 600	550 to 600	600 to 650	Over 650
Tuberculous Meningtiis	1	1	9	1	3
Poliomyelitis	0	0	0	1	121

TABLE V. SUGAR

Acute Purulent Meningitis	Mg. per 100 c.c. Under 10	10 to 40	40 to 50	50 to 60	Over 60
Meningococcus	4	21	4	4	4
Pneumococcus	2	14	0	0	1
Influenzal	0	7	2	0	2
Streptococcus	0	4	0	0	1
Staphylococcus	0	1	0	0	1

	Below 10	10 to 40	40 to 50
Tuberculous Meningitis	3	11	1

	Below 50	50 to 80	80 to 100	Over 100
Poliomyelitis	7	94	20	1

with an average of 596, and was below 650 mg. in 80 per cent of the cases. In the Boston series of sixty cases it varied from 471 to 753, with an average of 608 mg., and was below 650 in 77 per cent of cases.

In our series of 122 cases of poliomyelitis, the chloride content ranged from 646 to 942 (Table IV), with an average of 723 mg. per 100 c.c., and in 104 fluids in the Boston series it varied from 650 to 772 mg., with an average of 720.

Sugar

The glucose concentration in the cerebrospinal fluid appears to depend on (1) the blood sugar, (2) the permeability of the choroid plexuses and (3) the rate of glycolysis within the fluid. The glycolytic action of the bacteria and pus cells are said to be the cause of the lowered sugar content in cases of meningitis. Viruses apparently do not utilize or otherwise alter glucose levels in the spinal fluid.

In fasting individuals with a normal serum glucose, the normal range is between 50 to 80 mg. per 100 c.c. and between 50 to 100 in non-fasting individuals.

In our series of seventy-two cases (Table V) of acute purulent meningitis, the sugar content was below 50 mg. in 81.8 per cent, below 40 mg. in 73.5 per cent, below 10 in 8.3 per cent, and over 50 and 60 mg. in 12.5 per cent, respectively. In the Boston series of 154 cases, it was below 50 mg. in 86 per cent, below 40 mg. in 80 per cent, below 10 mg. in 23 per cent, and over 50 and 60 mg. in only 7 per cent, respectively.

Early in the course of tuberculous meningitis the reduction of the sugar content is usually less than in the acute purulent meningitides, but as the disease progresses, there is usually a progressive decrease. In our series of fifteen cases (Table V), the sugar content varied from 7.5 to 46.6 mg., with an average of 21.4, and was below 10 mg. in 20 per cent, between 10 to 40 in 73.4 per cent and between 40 to 50 in 6.6 per cent of cases. The sugar content, in 264 fluids examined by the Boston group, varied from 5 or less to 59 mg. per 100 c.c., with an average of 28. It was found to be below 10 mg. in 4.9 per cent, between 10 and 40 in 74.6 per cent, between 40 and 50 in 14 per cent, and above 50 mg. in 6.5 per cent of cases.

In our series of 122 cases (Table V) of poliomyelitis, the sugar content varied between 23 and 113, with an average of 67 mg. per 100 c.c. It was below 50 mg. in 5.7 per cent, between 50 and 80 in 77 per cent, between 80 and 100 in 16.5 per cent, and over 100 mg. in only 0.8 per cent of cases. This compares rather closely with the results found in 123 fluids examined by the Boston group in which the sugar content varied from 41 to 119 mg., with an average of 65. In 4.9 per cent it was below 50 mg., between 50 and 80 in 85 per cent, between 80 and 100 in 8.1 per cent, and over 100 in only 1.6 per cent of fluids.

Summary and Conclusions

1. An attempt at evaluating certain common laboratory procedures has been made in connection with a selected series of meningeal inflammatory conditions, including seventy-two cases of acute purulent meningitis, fifteen of tuberculous meningitis and 122 of poliomyelitis.

2. The N. intracellularis was the most frequent causative organism in our series of acute purulent meningitis and accounted for 51.3 per cent of the cases. The pneumococcus was found in

23.6 per cent, H. influenza in 15.3 per cent, streptococcus in 6.9 per cent and Staphylococcus aureus in 2.8 per cent.

3. In the group of acute purulent meningitis, the total cell count was above 1,000 per cu. mm. in 90.3 per cent of cases, while in the tuberculous meningitis 86.8 per cent ranged from 50 to 500, and in 93.4 per cent of the cases of poliomyelitis the total cell count was below 200 per cu. mm. In no instance of tuberculous meningitis or poliomyelitis was the total cell count over 1,340, the perdominant range of the acute purulent meningitis. However, in 2 per cent of the latter cases the count was below 100.

In conclusion, a total count of over 2,000 per cu. mm. is almost certainly caused by one of the bacteria other than the tubercle bacillus. Rarely, these same bacteria may give rise to a meningitis in the early stages of which the total count is less than 100.

4. We found that only 8.3 per cent of the acute purulent meningitides had a lymphocyte count above 15 per cent of the total cell count. Of these, one case due to H. influenza had a total cell count of 306, while in the five cases due to N. intracellularis it ranged from 3,100 to 7,225. In only 3.3. per cent of cases of poliomyelitis was the lymphocyte count below 15 per cent of the total cell count. In these three cases the total cell count ranged from 152 to 333. This, we believe, reflects the predominance of the neutrophile in the very early stage of the disease. In the tuberculous meningitis series, the lymphocyte count ranged from 72 to 98 per cent.

In conclusion, a differential count with more than 15 per cent lymphocytes greatly favors inflammations due to the tubercle bacillus or the poliomyelitis virus. These two groups hardly ever have fewer lymphocytes, but the acute suppurative meningitides occasionally do have more than 15 per cent lymphocytes. In the latter, however, the total count would in the great majority of cases be over 2,000 per cu. mm.

5. In our series of acute purulent meningitides, the total protein was between 100 to 500 mg. per 100 c.c. in 76.4 per cent of cases. In 93.3 per cent of the tuberculous meningitis it ranged from 100 to 500, and in only 5.8 per cent of poliomyelitis did it range from 100 to 500. In the latter group, 45 per cent had a normal total protein.

In conclusion, quantitative protein determinations maybe of some value in differentiating poliomyelitis from the other two causes of meningitis, but must be interpreted with care in the early cases of meningitis.

6. The chloride content was below 700 mg. per 100 c.c. in 84.7 per cent of the acute purulent meningitides. In tuberculous meningitis it was below 650 in 80 per cent of the cases. None of the 122 cases of poliomyelitis had a spinal fluid below 646.

In conclusion, the low chloride content of spinal fluid is of distinct differential value in distinguishing tuberculous meningitis from poliomyelitis. A level below 600 is almost certainly the result of the former.

7. The sugar content was 40 mg. or below per 100 c.c. in 73.5 per cent of the acute purulent meningitides, and in 93.4 per cent of the tuberculous meningitis. Only 5.7 per cent of the cases of poliomyelitis had a sugar content below 50 mg. per 100 c.c.

In conclusion, tuberculous meningitis can be differentiated with fair certainty from poliomyelitis by the almost uniformly low spinal fluid sugars in the former, and a level above 50 mg. per cent in the latter.

8. The combination of a total cell count between 25 to 500 with a predominance of lymphocytes, an increased protein with a decreased sugar and chloride content, is rarely seen in any other inflammation of the brain and its meninges except in tuberculous meningitis.

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SARCOMA OF THE UTERUS

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SARCOMA of the uterus is not new in medical literature, but due to the fact that it is comparatively rare as compared with cancer of the uterus, it has received very little attention. The first case on record was reported by C. Meyer at the Berlin Obstetrical Society in 1860, and it was described by Virchow in 1862. Very few large series of cases have been reported and these are incomplete, especially from the standpoint of end results or so-called five-year cures.

This presentation is based on the review of the records of St. Mary's Hospital covering the years of 1925 to 1947, inclusive, together with a report of a case by the author. Only seven cases occurred during these twenty-three years. For the purpose of statistics, this small group may not be of great value, but due to its rarity, even the large clinical centers do not have a large series to present. For instance, Kimbrough reports forty-three cases of sarcoma of the uterus from the department of gynecology of the hospital of the University of Pennsylvania, gathered over a period of thirty-three years. Novak found only forty-one cases over a period of twenty-five years at the Johns Hopkins Hospitals. Eighteen additional cases referred from the outside were added to this series, making a total of fifty-nine. Twenty-six thousand, nine hundred and seventy-three case specimens were studied in their laboratories during these twenty-five years. Dannreuter reported the occurance of four cases within a period of three months in the New York Post Graduate Hospital. Previous to this, only two cases had been encountered in this hospital over a period of ten years, although 1,854 operations for fibromyomata had been performed during this time. Randall reports thirty-nine cases from the Buffalo General Hospital and the University of Buffalo. Kardash reports ten cases from the University of Maryland School of Medicine. A study of the records of St. Mary's Hospital shows that it constitutes 0.54 per cent of uterine malignancies, or a relationship of one sarcoma to sixty-four carcinomas. Kardash reports 0.48 per cent. Kimbrough found the proportion to be one to thirty; Veit, one to thirty-seven; Evans, one to forty; and Frankl, one to twenty-seven.

TABLE I. INCIDENCE OF SARCOMATOUS DEGENERATION OF MYOMAS

Author	Incidence of Sarcoma	No. of Cases of Sarcomas	No. of Cases of Myomas
Kimbrough	3,388	26	0.76
Frankl	1,878	38	2.02
Masson	4,322	44	1.01
Randall	3,686	39	1.04
Kardash	1,446	10	0.48
Total	14,720	157	1.06
St. Mary's	1,309	7	0.54

Sarcoma is found both in the body and in the cervix of the uterus, although more commonly in the body, due, no doubt, to the fact that it is the more common site of myomas. It is most common in the fifth decade, but it is occasionally found in the very young. Novak reports its occurance in a child of seven months, and in one of two years. Diagnosis is rarely made before the time of operation, and usually not until the specimen is studied by the pathologist. The symptoms are varied and not specific. They more often suggest carcinoma than sarcoma. Excessive loss of blood at menses, intermenstrual bleeding, or both, may occur, especially in younger women, but absence of bleeding in the presence of the myoma does not rule it out. This is especially true when the endometrium is not involved. There may be a watery discharge which later becomes blood-tinged, and still later as a result of ulceration, foul discharge occurs, with shreds and necrosed tissue. Bleeding with the rapid increase in the size of the tumor points to sarcoma. Pain may be present in the later stages, as well as weakness, anemia, and cachexia.

Both Novak and Kimbrough report many deaths a few days after operation. In the latter's series, 47 per cent of those who died of sarcoma lived less than twelve months after operation. Many patients at St. Mary's died shortly after operation. However, Randall's follow-up shows that nine out of twenty-nine patients were found to be free of symptoms after five years.

Tumor cells may arise from any of the elements of the uterus, that is, muscle, connective tissue, epithelium, or blood vessels, as they are all of mesodermal origin. Sarcomas are classified as primary or secondary. They are classed as pri-

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mary in the absence of other myomas and in the absence of gross or histological evidence of preexisting myoma at the site of the sarcoma, and secondary when found in myomas as a result of degeneration.

common. The organs which are the most common site of the secondary tumor are the lungs and the liver. Gessner in thirty-three autopsies found metastasis in twenty-four, of which fifteen were in the lung, ten in the liver, eight in the intestines, five in the omentum, five in the kidney, and five in the pleura.

TABLE II. ANALYSIS OF CASES OF SARCOMA OF THE UTERUS
ST. MARY'S HOSPITAL, DULUTH, MINNESOTA

Number	Age	Status	Location	Primary or Secondary	Symptoms	Treatment	Results
98610	54	Married nullipara	Endometrium	Primary	Bleeding, pain, weakness	Pan-hysterectomy	Died
104905	55	Married	Myoma	Secondary	Pain, pressure in rectum	Subtotal hysterectomy	Died bowel obstruction
105393	46	Married	Myoma	Secondary	Backache, prolapse	Subtotal hysterectomy	living (12 years)
173761	50	Married multipara	Myoma	Secondary	No bleeding, weakness, anemia	Subtotal hysterectomy	Died 7 days postop.
133613	68	Married multipara	Myoma	Secondary	Bleeding, pain	Subtotal hysterectomy	Died
69089	64	Married multipara	Endometrium	Primary	Bleeding,	Total, pan-hysterectomy	living (2 years)
43955	45	Married multipara	Endometrium	Primary	Bleeding,	Total, pan-hysterectomy	living (4 years)

In advanced cases, this classification is impossible, due to the invasion of all tissues. The primary tumors are three times as malignant as the secondary. The number of mitotic figures determines the degree of malignancy of each specific tumor. Novak's description of the gross specimen is as follows: "Instead of the hard, rather glistening, cut surface of a typical myoma with its characteristic whorl-like appearance, the sarcoma areas present either the 'raw pork' appearance described by Cullen, or, when necrotic changes are more marked, they present as brain-like pultaceous, broken-down areas, with often a ragged cavity formation and perhaps hemorrhage." Dannreuther suspects malignancy in the presence of (1) unusual friability of the broad ligaments, (2) increased vascularity, (3) absence of a sharp line of demarcation between tumor and the myometrium, (4) difficulty in shelling out the tumor, (5) an opaque appearance on section, (6) an edematous appearance of the cut surface. An endometrial sarcoma may be polypoid in appearance, and may be mistaken for a benign polyp, although it is larger, denser, and more friable. In others there may be ulcerations simulating carcinoma. The grape-like sarcoma of the cervix is usually found in infants, although occasionally in adults. It is pinkish in color and edematous, and may fill the entire vagina and spread to the pelvis. It is always fatal.

Metastasis is by continuity, by the blood stream, or by the lymphatics, the blood stream being most

Treatment

Total hysterectomy is the treatment of sarcoma of the uterus. Due to the fact that the condition is seldom diagnosed preoperatively, and usually not until the pathologist makes his report, in most cases a subtotal hysterectomy has been performed. In Kimbrough's series, in twenty-one of the forty-three cases, a subtotal hysterectomy had been done, and a total in only 13. In Novak's series, 36.4 per cent received subtotal hysterectomy, and 22.7 per cent, total. Of the seven cases at St. Mary's Hospital, three had panhysterectomy and four subtotal. Two of those receiving a total hysterectomy were more recent cases, probably because of the fact that this type of operation is more common now since it is a safer procedure than formerly. In one of the subtotal cases the cervix was removed one year after the original operation due to prolapse. No malignancy was found in the stump. After subtotal hysterectomy has been done, and malignancy is reported before the operation is completed, the cervix should also be removed. If sarcoma is reported after the operation has been completed, radium in the cervix, rather than a secondary operation, is the best procedure in the majority of cases. All specimens of myomas should be examined by the pathologist as soon as the uterus has been removed, in order

that the patient may receive the best treatment immediately.

Case Report

Case 1.—Mrs. M. P., white, a widow, aged forty-eight, complained of profuse vaginal bleeding during menstrual periods, which were of eight days duration. No bleeding occurred between periods. The menorrhagia had existed for two years. She also complained of shortness of breath on exertion, lack of energy and drowsiness. Menstruation had begun at nineteen, was regular, and of a twenty-eight-day type. There was one living child, who was mentally subnormal. Two miscarriages had taken place. The family history was of no special interest; there had been no malignancy. The patient stated that she had always been well, and had had no operations.

Physically she was a large woman weighing 175 pounds, with a rather sluggish mentality. She had a scanning speech, a pasty, anemic appearance with puffiness of the lower lids; a dry and thickened skin, and thin and silky hair. Her eyes were normal, and the pupils reacted to light and accommodation. There was dental caries. The thyroid was not palpable. The heart and lungs were normal to percussion and auscultation. The blood pressure was 150/84. Bimanual pelvic examination disclosed the body of the uterus to be the size of the head of the newborn, and the surface was smooth. The uterus was freely movable, and the cervix was normal.

Laboratory studies revealed a hemoglobin of 38 per cent, erythrocyte count of 2,520,000, leukocytes 6,350, with a normal differential count, The urine was normal. The basal metabolism rate was minus 7. The Wassermann was 4 plus.

My clinical diagnosis was myoma of the uterus, with secondary anemia and tertiary syphilis. Due to the anemia and syphilis, it was thought best to improve her general condition before surgery. The bleeding was controlled by x-ray therapy over the pelvis. She was given antisyphilitic treatment, iron, and thyroid gland. Due to her financial status she was admitted to the county hospital and venereal clinic.

I did not see her again for a period of two years. In the meantime a diagnositic curettage had been done, and the pathologist reported normal endometrium. Her general condition was considerably improved. The hemoglobin had risen to 71 per cent, and erythrocytes totaled 3,500,000. She had had intensive antisyphilitic treatment. She was still taking thyroid and stated that she felt sluggish on discontinuing it. The size of the uterus had not increased. A subtotal hysterectomy was done. The tissues were very vascular and friable, and on dissecting the bladder from the uterus, where it was adherent to the fundus, a 2-inch long tear occured in the bladder wall.

The pathologist, Dr. George Berdez, reported a spherical uterus weighing 1,370 grams, and measuring 15 by 15 by 13.5 centimeters. Grossly, it consisted almost entirely of a large, rounded, solid gray fibrous tumor mass with a homogenous firm gray cut surface. The histologic diagnosis was leiomyosarcoma of a grade II malignancy.

Two months after the operation, her homoglobin was 80 per cent, and the her cell count was 4,090,000. Seven months later there were symptoms of metastasis, the most significant of which were a cough and pain in the chest. X-ray films demonstrated a consolidation of the upper three-fourths of the upper left lung, and aspirated fluid was thin and sanguinous. The patient died eleven months postoperatively from generalized metastasis. The autopsy revealed the left lung to be the region of the greatest involvement.

Summary

A brief summary of seven cases of sarcoma of the uterus from the files of St. Mary's Hospital, a review of the literature, and a case report by the author form a basis for this presentation. This series of seven cases, accumulated over a twenty-three-year period, may seem small, but due to the infrequency of the disease, only relatively small numbers of cases are encountered. Our experience as to frequency, diagnosis, and treatment corresponds to those of larger medical centers. One of our patients survived over twelve years, another over four years, and a third over two years. The other four patients were in an advanced stage and died within one year. An immediate gross study and frozen sections, when indicated, should be made at the time of operation by the pathologist in all cases of myoma of the uterus, and if malignancy is found and a subtotal hysterectomy has been done, the cervix should also be removed. Radium may be used in the cervix if malignancy is diagnosed some time after completion of the operation.

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THE CHILD, THE SURGEON, THE OPERATION

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SURGERY and psychiatry, at first glance, may seem to be strange bedfellows. The relationship is, however, not so strange in view of the growing realization of the interrelation of all the specialties in medicine. It is particularly important for surgeons and psychiatrists to co-operate. Surgeons are exacting in their requirements for their field. They can teach the psychiatrists a good deal in terms of methods in the scientific approach to problems. On the other hand, psychiatrists, out of their clinical studies and their more intimate relationships with their patients, may contribute something to the better understanding and management of surgical patients.

If there is any one outstanding difference between psychiatry and other fields of medicine, it is that the psychiatrist tries to get as complete an understanding as possible of the patients' problems in making an adequate adjustment to everyday living. If we, as physicians, regardless of our specialties, regard our function as that of helping the total person to get well, it is imperative that we learn to share our points of view.

In this paper I would like to present some of the clinical observations made over the past ten years at the University Hospitals with respect to children's reactions to operations. These children were having marked difficulty in making a satisfactory adjustment to everyday living—difficulty either precipitated by or originating from some operative procedure.

Surgical procedures are necessary. There is no question that operations on children, as well as adults, are upsetting and disturbing, traumatic not only to tissues but to the individual's psyche. As a general rule, adults are better able to tolerate surgical procedures than a good many children. I say a good many because not all children react adversely to operative procedures. In the main, children seldom share in the decision as to whether or not an operation is to be performed. That decision is usually made for them. Because children lack experience, they are considerably more dependent on others than are adults. This dependency forces them to submit to the decisions of others. Likewise, because children lack experience, they are unable, on their own, to "test reality." They can do this only by sharing with others their reactions and fears, and often they are not encouraged to do so. Often they are not given an opportunity to express their own real feelings about the operation, and they repress them. We know these repressions result in a great amount of fantasy. Children have peculiar notions about the anatomy of the body as well as some rather strange and peculiar misconceptions of the functions of the body. Sometimes their ideas are so strange as to seem almost fantastic. All these things tend to stimulate children's fantasies, with the result their imaginations run riot. This leads to increased inner turmoil or tension, commonly called anxiety, which spells trouble.

To illustrate, I would like to describe some of the rather dramatic experiences we have had with children referred because of difficulties that stemmed from some operative procedure. I do not mean to imply that the operative procedure *per se* caused the difficulty, but in retrospect it seemed to play a significant role in the particular problem presented to us.

Case Reports

Case 1.—Ann, an attractive, bright, preadolescent girl, mature for her age, was referred to the hospital because of anxiety attacks. During these attacks she would suddenly become agitated, to the point of being irrational. She would clutch her chest in the cardiac area, screaming, "I'm going to die, I'm going to die." These attacks occurred in school, on the playground, in the home, and on occasions during the night. They were becoming increasingly frequent.

The family was in modest circumstances. The father, a pleasant but dynamic, energetic individual, always seemed sure of himself. The mother was also a strong person, but since her marriage she had been compelled to assume a dependent role in the family circle. Having suffered deprivations in her early childhood, she had tried desperately to spare her children. She was anxious that they know the "facts of life." Consequently, at an early age our patient was well informed, biologically speaking. She and the mother were "very close to each other." The father, busy with his work and not at home as much as could have been desired, was not on intimate terms with his daughter.

Because of repeated upper respiratory difficulties, the

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parents had wanted the child to have a tonsillectomy. This the patient had persistently refused.

During a difficult time which the mother was having with a pregnancy, the father decided the child should have the tonsillectomy. Under protest the child visited the physician for examination. During the examination it was noted the child had a slight mole on one of her external labia.

It was decided to operate on the mole following the removal of the tonsils. Arrangements were made to admit the child to the hospital, the same one where her own mother was convalescing.

The morning for hospital admission, the child was brought by the father, who soon left. She was taken to the operating room and to all appearances was operated on successfully. However, later in the day she experienced her first spell of restlessness. Her convalescence was interrupted by the occurrence of a hemorrhage which necessitated readmission to the hospital for purposes of treatment. She was so reluctant to leave the hospital the second time that it was necessary for the father to offer her an attractive bribe.

It was shortly after return home her "spells" began.

Study of this situation revealed the presence of considerable tension between the parents, particularly regarding the management of the children. Though the parents were devoted to each other, this tension had served to disrupt the smooth workings of the household.

Work with the child finally revealed the source of her own difficulty. She had for a long time resented the mother's and father's disagreements, and in a sense felt personally responsible for a greater part of them. She was particularly resentful at having been compelled to submit to her operations. It was during her anesthesia she first felt she was going to die. "I was scared and I could hear my heart pounding so hard. I thought I was going to die."

As she began to talk these things out, she got a new perspective. Her attacks began to lessen and eventually ceased. She has been leading a successful life free of the "anxiety attacks" now for several years.

Case 2.—Ben, aged twelve, was admitted to the hospital with a broken leg. His father, who accompanied him to the hospital, was intoxicated. During admission proceedings the father disappeared.

Despite proper surgical management, the boy's progress was very unfavorable. In addition, he was belligerent and uncooperative. He appeared morose and unhappy.

After several interviews with this lad, it was learned he had been hit by a car while in the city with his father, who had been drunk. The lad further told about the hectic conditions which prevailed in his home because of his father's alcholism. He worried for the safety of his mother.

The mother was interviewed during one of her frequent visits to the hospital, and the boy's story was substantiated. She further informed us that for some time she had contemplated separation proceedings but had delayed. With the realization of how much the home situation was disturbing the lad and no doubt his siblings, she decided to proceed with separation plans.

She discussed her decision fully with the lad, which resulted in a good understanding between them. From this point on, the lad made very satisfactory progress and was soon able to leave the hospital.

Case 3.—Cathy, aged seven, was referred to our clinic with the following complaints: unwillingness to leave her home, to attend school and to sleep alone at night. She was becoming increasingly irritable and fearful, and with increasing frequency would demand to have someone close to her, preferably her father or mother. The fact that the father lost approximately 20 pounds of weight in the month preceding referral to the hospital suggests the tremendous turmoil he personally was under due to his daughter's disturbance.

What were the circumstances which seemed important in this case? In our interviews the following story unfolded.

Our patient had been the youngest of a family of five children. She had seemed quite happy about the pending arrival of a new baby in the home. However, as the period of gestation neared its completion, the youngster witnessed the death of a favorite friend, which severely upset her. Shortly thereafter she had a severe choking spell, precipitated by a piece of candy which had accidentally lodged in her throat. This further aggravated her restlessness, but no one paid much attention to it.

While her mother was in the hospital for delivery, our patient had the misfortune of injuring her arm. She was taken to the hospital where her mother was confined, for x-ray diagnosis and the application of a plaster cast under anesthesia. No one at this time thought to suggest that the patient might wish to talk to her mother or would like a message carried to her.

Shortly after the mother returned from the hospital with a new sibling, school began. Gradually our patient became more reluctant to leave home, finally refusing to attend altogether. Coincident with this she became more nervous, slept poorly, ate poorly, and was generally unhappy.

When all corrective procedures known to the family had failed, she was brought to a physician for examination, but nothing was noted physically. A mild sedative was prescribed, to no avail. A few intramuscular injections followed. Then spanking was advised. Finally deep surgical anesthesia was induced. None of these produced any change except to increase the presenting complaints.

Repeated interviews over a period of several weeks with both parents and child resulted in considerable improvement. During our work with the patient, she repeatedly discussed her feelings about the death of her best friend, her worry about her broken arm and how fearful she felt about going to sleep. Her chief difficulty seemed to center in her erroneous belief that because so much had happened to her, she must have been a particularly bad child. Again, as in other cases, these thoughts occurred to her during her first anesthesia.

Case 4.—Dan, aged fourteen, was admitted to the psychiatric ward of the hospital because of excessive crying spells, during which he became very agitated. He

was the youngest child and the only boy. He and his mother had always been very close.

The onset of the spells dated from a tonsillectomy he had had at the age of seven. At that particular time the household had been considerably disturbed by financial difficulties, aggravated by considerable parental tension. The lad was fearful of his father, a feeling he still had at the time of hospitalization. His basic difficulty was so deep seated he was finally committed to a mental hospital for long-time care. As the story was finally pieced together, it was the consensus of everyone that the operative procedure was a precipitating factor in the patient's neurosis.

Case 5.—Ed, aged seven, was admitted to the University Hospitals after a short period in the local hospital for treatment of extensive burns. Approximately 30 per cent of the body surface was involved. Soon after admission to our hospital he became a "behavior problem." He was rebellious, irritable, negativistic and decidedly uncooperative. Skin grafting was practically impossible. No one could do anything with him or for him. Finally, however, he did find one of our resident physicians acceptable, and management moved along quite smoothly for a time. However, rotations of the staff physicians soon brought a recurrence of the difficulties.

The staff was at a loss to explain his behavior until the boy gave us a clue one day. A friend who had promised to visit the boy did not arrive. In the course of a short interview with the patient, for he was very unhappy, he blurted out, "He's just like my mother. She never keeps her promises." The lad's complaint was investigated and found to be true. The mother, a very over-solicitous person, was particularly attached to this boy. Since his accident she had been much concerned about him and had not only increased her attentions to him but also had made promises which often were not kept. Among these was the repeated assurance that she would visit him daily whenever she was in the city. A friendly but firm consultation with the mother helped her to see what she had been doing in not being honest with her boy. This she corrected, with a surprising change in the lad's behavior and convalescence from that point on.

Comment

Further case histories could be cited. Enough have been presented to illustrate the kind of personality difficulties which may stem from operative procedures.

In our experience, it can be said with reasonable confidence that a child who later presents problems of adjustment was neurotic to some degree previously. In the cases presented there is enough evidence to justify that supposition. A potentially neurotic child is prone to be more dependent than the average, and hence, less able to handle a threatening situation.

Predisposition to become neurotically disturbed stems largely from difficulties in the home. Among the more prominent are parental discord. Nothing is more threatening to the stability and security of the child than parental tension, whatever its classification or degree.

Difficulties arise when the child is not certain of what his parents expect of him, or when parental disagreement occurs as to what the child can or cannot do.

In some instances, as in the case of Cathy (Case 3), too much happened to the child in a short time interval. Spacing of the events might have spared the child trouble. When too many things happen to a child in too rapid succession, he is unable to cope adequately with them, and anxiety becomes overwhelming.

In no instance was the child encouraged to help make the decision about the operative procedure, nor was an effort known to be made to help the child express his own feelings about what was to happen to him either before or after the operation.

Discussion

It may be asked how often neurotic behavior is encountered in children. No definite figures are available to indicate what the actual percentage of neurotic children is. However, it is possible to say that, in general, a larger number of children manifest signs and symptoms which foreshadow increasing difficulties later in life than is ordinarily appreciated. Between October 1, 1948, and January 1, 1949, 178 youngsters who had some kind of adjustment difficulty were seen at University hospitals.

Some years ago it was estimated that if 100 average grade-school children were selected at random, irrespective of sex, age, or grade placement, between twelve and sixteen would encounter serious adjustment problems later, either because of severe mental illness, delinquency or inadequate educational preparation.

This is a rather significant percentage. A further tragedy is the estimate that between thirty and thirty-five of the remainder are destined to lead unhappy lives because of unwholesome personality traits. Emotional disturbances in children are so much more common than previously appreciated that the fact no longer can be ignored by any of us.

Little is found in medical literature on the subject of the reactions of children to operations. I found but two references. In 1941, Pearson[2] reported a series of eleven cases in which adjust-

ment problems seemed to be precipitated by operative procedures. Several adults were included in his series. In 1945, Levy[1] reported his findings on a series of 124 cases. Of interest is his finding of a higher incidence of difficulties in children who were operated on when three years of age or under. Of further interest is the large number of tonsillectomies in this age group.

In explanation of the higher incidence of difficulties encountered later in children operated on early in life, Levy[1] mentions the forcible separation of the child from the mother at an age when he is more dependent upon her than at any other stage of his development. Mention is also made that the child reacts more definitely to physical pain than later in life. In addition, children in this age-range live in a more circumscribed world and hence lack social experience, which increases their dependency. The child of this age is also less able to express himself verbally and hence is less able to understand explanations offered him. This combination of circumstances leaves him poorly equipped to handle postoperative anxiety feelings, which may pave the way for later difficulties.

Levy[1] found that the difficulties encountered subsequent to operations could be classified in one of several groups: those children who (1) develop fear reactions such as night terrors, or fear of strange persons, places or the dark; (2) become negativistic or uncooperative; (3) become markedly dependent upon one or both parents, or (4) develop regressive phenomena such as temper tantrums or bed wetting.

These findings reinforce the well-known observations that many behavior problems are precipitated by operations performed under anesthesia. The question arises, "What can be done to prevent or minimize the occurrence of subsequent adjustment difficulties?"

Prophylactically, all unnecessary operation should be avoided in every age group, but more particularly in the younger age range.

There are times, however, when an operation is essential and must be performed.

Should an operation be necessary, several important but simple procedures can be done to minimize possible later difficulties.

Pearson[2] calls our attention to the surgeon's concern in evaluating the patient's ability to withstand surgical shock, a factor of primary importance in some instances. He suggests further that the surgeon evaluate the child's ability to withstand the psychic shock of an operation. This may seem a formidable task, but a few observations may make it less so. A few very simple things might be kept in mind. First, an attempt to evaluate the general atmosphere or tone of the home from which the child comes is important. Is there any evidence of marital tension? Has too much been expected of the patient? Does he manifest any evidence of the tension because of the demands imposed on him? Is school performance adequate? What has been his reaction to the present illness? Have there been any unusual experiences immediately prior to the present illness? In other words, have many things happened in a short period of time? And last but not least, what feelings do the parents manifest about the patient, his illness and the proposed operation?

If the parents are calm and confident, the child will have a better chance of taking an operation in his stride than if his parents are indecisive or nervous. The direct relationship which exists between the feelings of a child and an adult associated with him in a threatening situation was one of the best lessons learned during the last war, when children were being evacuated from London during the blitz. It was found that even though they were separated from their families, they could manage the threat of an air raid successfully if they were in the presence of a calm and stable individual. But if they were in the presence of an adult who was nervous, fearful or tense, they were not able to manage so successfully.

It is important to determine the preparation of the child for surgery, both remote and immediate. What has been the general attitude toward operative procedures, not only of the immediate family but of aunts, uncles or cousins with whom the child might have been associated? Few of us have any idea what a tremendous influence discussions of this kind have on children. Some effort should be made to evaluate the remote preparation of the child. Of course, the immediate preparation will be our responsibility. If something is to be done, it is our obligation to inform him. The capacity of the child to "take it," when he knows what is to be done, is amazing. Sometimes the child is rebellious and fearful for a while, but if informed, he at least learns he can depend on us.

The child should be encouraged to share his own true feelings with us. His questions should

be answered honestly and simply. Elaborate discussion is not often indicated. It may be necessary to answer questions over and over. And above all, discussions of the child's problems with our confreres in the presence of the child should be conducted with care and discrimination. Each of us, at some time, has been careless in this respect. Let us remember that the child in pain reacts adversely to being "poked" as though he were just a piece of machinery. As fear and anxiety caused by our thoughtlessness may have devastating results, adequate preparation of the child is of prime importance.

Attention to hospital procedures is likewise essential. The child's admission to the hospital should be with someone he knows and in whom he has confidence. If the child is particularly apprehensive, the adult closest to the child might even be encouraged to accompany him to the operating room.

Preoperative medication should be administered in sufficient dosage and at a time to be maximally effective. Ideally, anesthesia should be induced in a room with no unnecessary equipment or operative tools around. If this is impossible, attention to this detail in the operating room may be kept in mind.

Having someone familiar with the child when he awakens will provide the reassurance and comfort needed. Likewise the possibility of developing adverse feelings or unusual fantasies will be minimized.

The performance of more than one operation at a time, such as a tonsillectomy and circumcision should be avoided. If essential, full preparation of the child is required.

Should a child react adversely to an operation, his emotional disturbance should not be treated lightly. To do so may portend trouble later on. It is a complication and should be handled as such. To treat it lightly, to try to talk the patient out of it, or to ignore it, does the patient and his family an injustice.

In summary, physicians' awareness that personality problems do occur in children is increasing and is gradually becoming a subject of importance in medicine. There are a greater number of children who may be said to be either preneurotic or neurotic than has been generally appreciated. Because operations performed on these children may be important in later adjustment problems, surgeons could well include an evaluation of the child's capacity to withstand the emotional trauma of the operation, along with other preoperative studies. In so doing the possibility of later adjustment difficulties developing may be lessened.

References

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Discussion

Dr. Tague Chisholm: I only have some very brief comment. I enjoyed Dr. Jensen's discussion very much, indeed. I would merely like to amplify one or two details from my own office. I think that if children can see what is being done, they are less apprehensive than if they can't. For example, take a laceration of the hand or lower extremity when suturing should be done. The child can watch and be told what to do. He actually participates in this experience, whereas if the laceration is in the face or close to the eyes or back of the scalp, the child can't see and cannot, therefore, share in the management. I feel, therefore, that the patient should be informed that he is going to have a little anesthetic and that he will be asleep, and that when he wakes up the lacerations will be all fixed up. Then there is no unhappy experience, since the child can share in the task and knows what is going on.

In my period of work in pediatric surgery with Dr. Gross, Dr. Ladd and Dr. Wyatt, I have always been impressed by the way they examine children. They don't go into the examining room and start poking the side of a tender abdomen. They go in and ask first what the child's name is. If a favorite toy has been brought along, they play with it and try to demonstrate to the child they are friends and also friends of his toy.

The most difficult part of the examination is looking at the throat and ears. This should not be done first but last. The most important part is feeling the right lower abdomen first and then continuing the examination in proper order. When these examinations have been completed, the discussion, which frequently ensues between the family physician and parents, relates to whether an operation should be done, what the x-rays show, what the white cell count is. This should not be done in front of the child but outside the room. If an operation is going to be done, then don't bluff the child but tell him it is going to be done. Do not deceive him. I have been constantly amazed that children who come for examination are often under tension, but when a decision has been made and an operation is to be performed, the child feels a lot better if he is informed of the operation. He will be a lot sicker if he does not know about it. Many children who are to have an appendectomy or herniotomy will feel much better the day after the operation if they known they are going to have it. I have felt that these men, Drs. Gross, Ladd and Wyatt, should be a pattern for us to follow when we deal with children who are candidates for operation.

THE VALUE OF THE RORSCHACH TEST

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THE Rorschach test is a projective technique based upon the recording, formulation, and scoring of the patient's responses to ten standard ink blots. These ink blots are on individual cards, and the patient is given each card separately and asked to tell what he sees in the blot. Inasmuch as each blot is an amorphous stimulus and has no meaning in itself, what the patient tells the examiner is a reflection of the patient's own personality. Through a rather complicated system of scoring and formulation, it is possible to obtain by means of a Rorschach test a three-dimensional view of the personality. In other words, the virtue of this type of "projective" technique is that we can learn about various aspects of personality function, factors which would remain hidden to an examiner relying exclusively upon an across the desk interview and upon some of the self-administering tests.

The chief objection to the Rorschach test is the complicated system of recording and scoring. There are several schools of thought about the methods of scoring of a Rorschach test, and there have been several modifications of the technique. However, it is my feeling that when one modifies a technique such as the Rorschach technique, the result is not a true Rorschach record but is somebody's modification of the Rorschach record. Therefore, I believe that in the interests of scientific accuracy, it would be well if we adhered to a standard technique. As in many other fields of scientific work, the establishment of norms is of extreme importance. Therefore, if subjects are exposed to a variety of Rorschach techniques, it is difficult to see how valid norms ever can be established.

The record which is obtained by a Rorschach test is known as a "psychogram." A psychogram is to the psychic structure of a patient what the roentgenogram is to the physical structure of an individual. The psychogram gives a three-dimensional view of the personality; not only do we learn what is going on on the surface of the personality, but we also obtain valuable informamation as to what is occurring in the deeper layers of the personality structure.

To the practicing clinical psychiatrist the Rorschach test furnishes considerable valuable assistance. My first acquaintance with the Rorschach test was formed in 1940 when I attended Dr. Beck's course at the Michael Reese Hospital in Chicago. Since that time I have used the test increasingly and have spent many hours discussing it with Dr. Beck. Moreover, I administer, score, and interpret all of the Rorschach tests taken on patients referred to me for psychiatric treatment. Through these experiences I have been able to form some opinions and draw some conclusions about the value of the test.

From the purely clinical standpoint the value of the Rorschach test can be regarded under three categories: diagnostic, therapeutic, and experimental. Much can be said about the diagnostic value of the test, especially when it is administered by the therapist himself and integrated with his other observations. One feels that if the Rorschach test is to be taken by the therapist, it should be done before the psychotherapeutic interviews are started. As I have pointed out previously, it is better to take the test early than to wait two or three weeks after the patient is first seen. For the sake of scientific accuracy the test should be taken before transference to the therapist has occurred. Otherwise the record may be distorted. (From the diagnostic standpoint I consider the behavioral aspects of the Rorschach test very important, and these may be altered if the test is made after transference.) Unconscious hostilities may lead the patient to prolong his reaction time in an effort to punish the examiner, or the fear that what he is doing may not be pleasing to the examiner may color the record with anxiety. Therefore, I take a Rorschach test during the second or third interview. Moreover, if the therapist waits until after he knows the patient before taking the test, it is difficult when formulating and interpreting to be objective and to distinguish between what one learns from the test and what one has learned about the patient from other sources. Therefore, for the sake of keeping the Rorschach test on as strictly an objective basis as possible, this distinction should be maintained.

I will mention just a few of the areas in psychiatric diagnosis in which the Rorschach test has been especially valuable to me. One is in homosexuality. Most of my clinical experience has been with *male* homosexual patients, and I have secured Rorschach records on a considerable number of them. It is becoming increasingly clear that homosexuality is merely a symptom of some underlying personality disorder. Some homosexual persons are hysterics, some are compulsive neurotics, some are psychopathic personalities, some are schizophrenics, some are feeble-minded, some are suffering from organic brain disease, some suffer from anxiety neuroses, and some are constitutional inverts. Not only does the Rorschach test help greatly in determining the treatability of many homosexuals, but it also has provided important therapeutic leads in the psychotherapy of patients accepted for treatment. I am sure that without the Rorschach test several of the patients successfully treated could not have been helped except possibly through *deep* psychoanalysis.

Another group of patients in whom the Rorschach test has been of value is that of the chronic alcoholic or the problem drinker. In recent years many changes have taken place in our basic concepts regarding these patients. We now know that problem drinking is symptomatic of an underlying neurosis or psychosis. Aside from those who are constitutionally psychopathic, problem drinkers usually are superior adults who are conflicted, display much emotional immaturity, are sometimes fixated at an infantile level, and are strongly introverted. They are sensitive, shy, and frequently suffer from marked feelings of inadequacy. The Rorschach test is helpful not only in identifying the source of conflict in these patients but also in helping to bring conflict material to the surface where it can be dealth with. Furthermore, the content of the patient's responses often furnishes important psychotherapeutic leads which, when followed, bring us to aspects of the problem which, unless the patient underwent a deep analysis, would not be recognized.

Another field in which the Rorschach test is of great value is that of forensic psychiatry. Any psychiatrist who is called upon to give medical-legal opinions, either in court or elsewhere, realizes the importance of "objective signs." During the cross-examination of an expert, attorneys pursue the question of what part of the expert's opinion is based upon "subjective symptoms" and how much is based upon "objective findings." To bring a psychogram into court is to furnish the judge and jury with something that is almost as "objective" as a roentgenogram. As I said before, the psychogram can be regarded as an x-ray of the personality structure just as a roentgenogram is an x-ray of the physical structure of an individual. In a recent case, a man who had been committed under the Minnesota Psychopathic Personality law as a sexual psychopath petitioned for restoration of capacity. He had obtained statements from two competent psychiatrists to the effect that, in their opinion, he had made an adequate adjustment. For various reasons the State had reason to believe that this man had fooled the two psychiatrists, and he was referred to me for examination. As part of the psychiatric survey I made a Rorschach analysis. This analysis showed unmistakable signs of a persisting psychopathic state and led to further investigation of the patient's total life situation. The petition for restoration to capacity was denied, and, to the court, the "objective" nature of the psychogram was a most significant piece of evidence.

Closely linked with diagnosis is prognosis. In all fields of medicine prognosis is of great importance. The patients, their family, their friends, their employers, their clergymen, their insurance companies are much more interested in prognosis than they are in the morbid anatomy, psychopathology, bacteriology, and chemistry of the victim's ailment. Frequently a physician's standing in his community can be seriously affected by the correctness or the incorrectness of his prognosis. Nothing could be more embarrassing to a physician than to make a diagnosis of psychoneurosis on a young woman and then have her come in a few weeks later with the nystagmus, diplopia, spastic gait, and the urinary incontinence of multiple sclerosis. It is very disconcerting for the psychiatrist to make a diagnosis of an organ neurosis on a young man and a few weeks later see him in a full-blown paranoid schizophrenia. The ability to make a prognosis in medicine is not something that can be learned from books. It can be acquired only through long years of experience. Therefore, any instrument that will

aid in making an accurate prognosis surely is a valuable agent. If a young man at the time he is suffering from organ neurosis gives a Rorschach test that denotes a preschizophrenic state, the prognosis and the therapeutic approach are changed in all of their fundamentals. If the young woman who has multiple sclerosis, but also not yet reached the point where the disease has caused reflex changes along with other objective findings, is submitted to a Rorschach test and does not show psychoneurosis or hysteria, one will be much more reserved in making his diagnosis of a functional nervous disorder, and there will be frequent neurological examinations.

This brings us to the ubiquitous question of psychosomatic disorders. I have stated elsewhere that psychosomatic medicine is at present in the limelight. In fact, it seems that there is danger of overemphasizing the importance of psychic factors in disease and ascribing too great a portion of the clinical picture to the "functional overlay." Admittedly, every disease has both psychic and physical components. However, the word "psychosomatic" is already in danger of becoming an all too convenient label for *any* illness in which there is a psychic factor and in which the dynamisms are not immediately clear. There is danger that in lieu of a careful and painstaking examination to discover primary organic etiologic factors in a given case, physicians will, after a cursory glance at the problem, label it "psychosomatic" and neglect definitive treatment directed at the organic substratum. This state of affairs has not yet come to pass but in view of the accolade given the psychosomatic concept, one feels that a note of warning should be sounded. Our thinking about psychosomatic disease must be accurate and careful. The term should not be applied indiscriminately to every condition in which a psychic factor is operating, for if that were the case, every illness would belong in the field of psychosomatic medicine. By restricting the use of the term "psychosomatic" to conditions in which demonstrable physiologic alterations or structural changes result, fully or in part, from psychogenic processes, we exclude the "somatopsychic" entities, the disturbances in the mental life of a person which result from somatic disease, e.g., cerebral arteriosclerosis, brain tumor, syphilis, alcoholic intoxication, vitamin deficiency, the deliria, and the like. Some times it is extremely difficult for the physician to distinguish psychosomatic from somatopsychic disorders, and in many cases the Rorschach test is extremely helpful. Flanders Dunbar[1] says:

"The Rorschach test probes beneath the observable behavior, conversation and mannerisms to deep-lying, often unconscious feelings and motives. The psychosomatic examinations usually give more clearly the specific people and situations in a person's life which occupy his attention, arouse interest, love, anxiety, fear, and the like. The Rorschach test shows the extent to which his interpretations of the external reality are rational and objective, or distorted and erroneous because of past conditioning. The test distinguishes between superficial shock reactions and the more deep-seated characteristic reaction patterns. It gives some indication of whether a symptom or illness represents a wholesale solution of most of life's problems or just a temporary expedient in dealing with a specific problem."

I wish to report briefly two cases in which the Rorschach test was extremely helpful and furnished important diagnostic and therapeutic leads which led to successful treatment in each case. These cases have been reported elsewhere,[2] but I am including them here for purposes of illustration.

Case 1.—F. J. was a boy, fifteen years old, who was suffering from severe bronchial asthma. There was no family history of allergy. Both parents and two siblings, of which F. was the second, were living and well, and there were no dead siblings. The father was a successful businessman, never paid much attention to family problems, and had an unsympathetic attitude toward the patient's illness. The mother was an attractive, dynamic but somewhat vain woman who assumed a strongly protective attitude toward F. Many thought that she "babied" him. Because of his asthma it was necessary for F. to be on a very strict diet, and he also lived in a specially constructed air-conditioned room which had been built for him in the family home. The only relief that F. ever obtained during an asthmatic attack was from adrenalin which was given hypodermically always by the mother. It seemed that the mother was a very important personality in the dynamics of F.'s illness.

During the past few years the patient had been sent to a school in a warm dry climate, and at the school he had many adjustment difficulties and much asthma. His mother made numerous trips to the school (1500 miles from home) in order both to "get things straightened out" and also seemingly to satisfy her own emotional need to maintain a supervisory and protective attitude toward F. The father frequently expressed the opinion that the mother was too "soft" with the patient and felt that the boy should be handled along lines that were more hardboiled. The parents often quarreled over the management of F.'s asthma, the mother taking the boy's part.

F. himself was a pleasant, intelligent, nice-appearing lad who made a good impression. He was slightly effeminate, and his chief interests were art and music. He had some talent as a painter but never showed any interest in the more virile pastimes such as hunting, fishing, or athletics. He did not seem to exhibit any undue fear or concern about his affliction except that it restricted his activities. He took his asthma more or less for granted but was anxious to have something done to relieve it. The question in our minds was how much was the asthma an expression of F.'s need to be dominated and cared for by his mother? Were the attacks a weapon which he was unconsciously using against his father, or a device to get attention from his mother, or the expression of some psychosexual conflict? The psychosomatic history was suggestive but not conclusive.

The Rorschach test showed a sound ego structure but signs that F. was not functioning at the level of his personality. He showed the emotional irritability and instability usually seen in the adolescent and also evidences of mild neurosis. However, there was no deep anxiety, the phantasy life was robust and healthy, and there was no evidences of excessive introversion or extraversion. Associations were broad and free, and the personality was well integrated and liberated. Our conclusion was that the Rorschach test did not follow the psychosomatic formula, and the boy's physician was advised to direct his efforts toward the offending allergens and other medical considerations inherent in the problem. Latest reports indicate that F. is responding very satisfactorily to medical treatment. On the basis of our Rorschach findings and on the basis of F.'s response to medical treatment, psychotherapy in this case would have been a waste of time.

Case 2.—Mrs. A. O. was an attractive white woman, thirty-one years of age. She was referred for a psychiatric survey because she was nervous and still complaining of abdominal pain in spite of several major operations performed in an effort to relieve it. All of the physical examinations and laboratory tests carried out by her physician had given normal findings. Without going into the details of Mrs. O's history, but in order to give an idea of the surgical traumata that she had endured, the following points will be noted. Mrs. O. had a tonsillectomy in 1930, and this was uneventful. She married in 1933. In 1934 she became pregnant, and she stated that this pregnancy "was a burden." She vomited throughout the entire pregnancy, delivery was accomplished only with the aid of high forceps and Mrs. O. had extensive perineal lacerations. She again became pregnant early in 1936, and all through this pregnancy Mrs. O. had excessive nausea and vomiting, backache, and urinary tract infection. She was anxious and tense and at the seventh month was threatened with a miscarriage. However, the pregnancy went to term and delivery was uneventful. Following the puerperium Mrs. O. developed severe abdominal pain which she was told was "due to her tubes." However, she could not stand an operation, so she went to stay with her parents in Florida. Finally in the fall of 1939 a pelvic laparotomy was performed, and all of her organs were found to be in good condition with the exception of the appendix which appeared to be chronically inflamed. The appendix was removed without any relief of the patient's abdominal pain. Following the operation, Mrs. O. never felt well. Her husband became disgusted with her, and for the following five years Mrs. O. was a very unhappy woman. She was depressed, nervous, and jumpy. She again became pregnant in February, 1944, and soon she began to have severe abdominal and right flank pain, chills, and fever up to 103° F. In May, 1944, a nephropexy was performed, and following this the patient was in bed for several weeks because of burning urination, alternating constipation and diarrhea, vomiting and severe abdominal pain. Another physician then made a diagnosis of gastric ulcer and kept Mrs. O. under hospital management for several weeks, during which time she got worse. It was subsequently found that there was no free hydrochloric acid in her stomach. In July, 1944, she was operated upon for a ruptured ectopic pregnancy, and following this the abdominal pain became worse and persistent. She then became depressed, had daily crying spells, was worse in the morning, lost interest in everything and bought a piece of rope with which she planned to hang herself. She consulted her physician, who, after ruling out serious organic disease, referred her to me for a psychiatric survey. Our question was: is this condition somatopsychic or is it psychosomatic?

It was decided to make a Rorachach analysis. In this case, the psychosomatic formula was much in evidence. It showed signs of severe emotional stress, strenuous inner conflict, neurotic behavior, deep anxiety, and emotional immaturity. However, the ego was sufficiently strong to prevent the patient from seeking escape by way of a psychosis. This is what we usually see in the psychosomatic formula. Furthermore, the associational content in this case revealed the nature and origin of the conflicts, many which centered around the patient's mother. It is interesting to note that during the giving of her psychosomatic history, Mrs. O. insisted that she always had admired her mother, that the mother was an ideal person who liked people, liked to entertain, was affectionate, got along well with her husband and "lived for her home and family." It was only after the Rorschach interpretation had been discussed with Mrs. O., and she was asked to try to think of any disturbing reaction to her mother that she might have had, that the true story came out. Although the mother was a very pleasant and gracious person to her friends and acquaintances, she was in reality a chronic surgical invalid. She had a martyr complex. In addition to this, she was tremendously overweight, a state of affairs which Mrs. O. deplored and passionately wanted to avoid. The mother also had an enormous ventral hernia, she suffered from indigestion, constipation and hemorrhoids, and her health was a constant subject of conversation ever since Mrs. O. could remember. Time and space will not permit a full description of the psychological implications of the mother-daughter relation-

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CHOLECYSTECTOMY

A Technique for the Occasional Operator

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It is my purpose in this article not to discuss the extensive subject of gall-bladder surgery and its complicated ramifications, but rather to outline a procedure for simple cholecystectomy. The technique proposed here, I believe, renders the operation safe, relative to accidents involving the vascular and ductal components of the biliary system.

The reader may properly question my justification for such a presentation, considering the numerous articles that have been well prepared and presented by masters in this field. My reasons for writing this paper are as follows:

1. It is written for the occasional operator, with the thought that he has special difficulties to overcome which the practiced surgeon has not.
2. The techniques presented in standard books and periodicals, though written with the intent to instruct in the avoidance of accidents, actually present descriptions and representations of movements which invite castastrophic results, except to those learned in this field.

I have no statistical knowledge of the facts, but I am assured that a large proportion of cholecystectomies are being performed by men who are not finished surgeons in this field. If this is true, those men should have access to literature that has been produced with the purpose of imparting to them in particular the leading points in technical safety. At present, to procure this knowledge and successfully carry the delineation to the operative field, the occasional operator must read a great amount of (to him) superfluous literature in order to glean the proper salient points. The average general practitioner has not the time for that amount of reading. He therefore operates, using a technique that is safe only in experienced hands, and thereby blunders into accidents.

Except by Behrend,[1] the descriptions of anomalies in the operative site are presented in too general a manner, rather than properly pointing out that not only does this area contain numerous anomalies but also that variables exist in the anomalies themselves, producing most deluding situations. The repeated reference to the kinking of the common duct and excision of a part thereof, the torn cystic artery, the clamping of the hepatic artery, the short hilal duct, and injuries due to attempts to secure hemostasis in a pool of blood, leads one to assume that these are the only dangerous possibilities, and the reader is promptly jarred into confusion by another variable. The literature does not properly impress upon the reader that he should accept confusion as a proper mental state for the performance of safe gall-bladder surgery, and that therefore he should carry out a careful inspection of the field before proceeding at any stage.

In the literature I have invariably met with the same situations with respect to authors unintentionally ensnaring the unwary in difficulties by presentation of procedures he cannot properly perform. I feel that these articles, although intended to assist the occasional operator, impart information which leads him into just those dangerous situations which the articles had intended to help him avoid:

Lewis[9] advises and illustrates puncturing of tissues, undermining the cystic duct, and transection near the common duct. He states that the duct and artery may be ligated together, and advises isolation of the cystic artery in the soft tissues.

Bickham[3] illustrates passing an aneurysm needle under the cystic artery and duct, and ligating them together.

Spivack[12] illustrates and discusses the passing of an aneurysm needle around the cystic duct close to the common duct, and the use of a clamp at a set distance from the common duct. He admits to searching for the artery in the tissues. Spivack also illustrates grasping a fold of peritoneum containing the cystic artery. He illustrates further, digging in dangerous tissue in order to locate and ligate the cystic artery. He illustrates the duct and artery being clamped a good distance from the gall bladder.

In Christopher's book[5] there is illustrated the clamping of the cystic duct with its peritoneal covering, and there is demonstrated the passing of a needle and suture into the tissues about the cystic duct. Both of these procedures are admittedly vicious.

Maingot[10] states that the cystic artery should be identified before ligation. He further states that the dissection which is concerned with the exposure is the very method by which the artery may be torn. He also seeks for the artery in tissues dangerous to invade. He

pictures the clamping of the artery near the hepatic duct, then warns of its dangers. He advises encircling the cystic duct with a needle, and also uses clamps at a given distance from the common duct—a predetermined distance.

Behrend,[1] after an excellent consideration of anomalies, illustrates knife dissection near the common duct. He further shows the extreme spreading of tissues, the clamping of the cystic duct at its mid-point, followed by seeking for the cystic artery in the deep tissues.

Vaughn,[13] after a discussion of anomalies, pictures the cystic duct clamped far from the gall bladder. Further, he describes seeking for the cystic artery in the areolar tissue and admonishes against carelessness because of danger to the hepatic artery.

Bettmen[2] states that the first step should be the exposure of the cystic artery, which he illustrates being clamped near the hepatic duct. He states that this artery is easily found and is rarely anomalous.

Cattell[4] states, "Since stricture as of operative injury is preventable, it is a real tragedy." He mentions tearing of the cystic artery during tension on the gall bladder. He pictures clamping the common duct angulation, then illustrates clamping "properly" close to the common duct.

Cutler and Zollinger[6] describe and illustrate the cystic duct being undermined at its mid-point, and there transected. They also seek for the cystic artery in the depths of the fibro-nerve tissue, and ligate at that point.

Graham[7] illustrates the cystic artery ligated close to the hepatic duct.

Lahey[8] describes and illustrates seeking for the cystic artery in the periductal tissues. He illustrates undermining the cystic artery away from the gall bladder. He further describes and illustrates undermining the cystic duct at its mid-point, followed by transection.

It is my opinion that if the above-reviewed techniques are followed by the occasional operator, he will frequently find himself within the realm of a trying siege, discovering dangerous situations only after harm has been done.

None of these articles suggests that one should work as far from danger as possible when destroying tissue, avoiding treacherous areas altogether. These problems can be overcome only by preparation for each stage of advance.

The operation should be entered upon in the proper state of mind—that is, to accept it as a beguiling procedure with pitfalls at every turn, nothing to be accepted as it seems to be without thorough inspection. In an area the size of a dollar, nature has formed for the operator an amazing number of anomalies, making each case a new challenge to the resourcefulness of the surgeon, and demanding of him that he clamp and cut any structure as far from danger as possible, and that there be no sharp dissection or crushing of tissues unless absolute proof of safety is presented.

I consider it quite important that the occasional operator be quick to admit his limitations and resort to a cholecystostomy if the presenting difficulties warrant it. It is paradoxical that Dr. Lahey[8] with his wealth of experience and knowledge would only drain in a case presenting a short hilal-placed duct, while those of vastly less experience will bravely chop through to a cholecystectomy no matter what presents—no matter what the gamble in ultimate harm to the patient.

I wish to present a procedure which I have been employing for many years, with which I have been able to cope successfully with a number of anomalies, and which I feel will protect the occasional operator no matter what anomalies are present.

Technique

The discussion of the abdominal incision is not within the scope of this paper. Suffice it to say that excellent exposure and good lighting are absolutely necessary, with no place whatsoever for trick surgery through small incisions. One should bear in mind continually that the real finesse of the operation is concentrated in a small area about the cystic duct. The purpose of the operation is to enter this area, carry out the proper procedure, and retreat with the assurance that one will do no harm. If that confidence is lacking in a particular case, drainage of the gall bladder is the alternative, rather than aimless sparring with tissues.

The first question to be settled is whether or not the appearance of the gall bladder suggests the possibility of there emptying into it the right hepatic or common hepatic duct.

If the gall bladder is excessively distended, it is emptied of stones and fluid.

The peritoneum of the antero-liver aspect of the gall bladder is incised, the incision progressing from a point about two-thirds the distance from the fundus, near the liver, in a curved manner to the cystic duct, and thence to the common duct. At this point the cystic and common ducts are exposed only minimally in order to establish a rough idea as to their location. No structures except the peritoneum are molested (Fig. 1).

The peritoneum is gently loosened from the gall bladder and peeled toward and only to the area bordered by the liver, the liver aspect of the

gall bladder, the cystic duct, and the right hepatic duct. I will refer to this space of areolo-fibro-nerve tissue as the "danger area."

As each vessel is demonstrated on the gall bladder (please note—on the gall bladder), it is

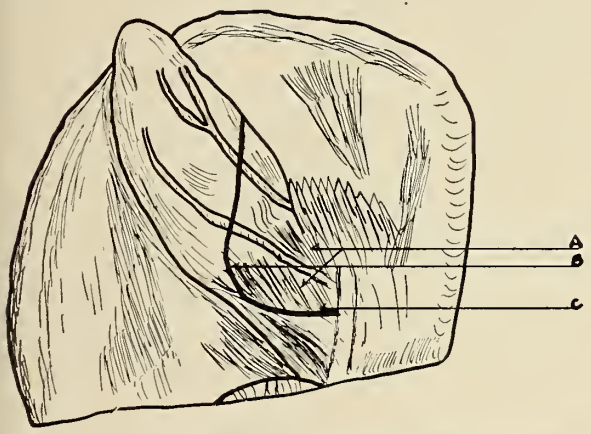


Fig. 1. (*A*) The "danger area" to be avoided. (*B*) Line of incision on the gall bladder. (*C*) The incision continued over the area of the cystic duct.

ligated, transected, and gently peeled off the organ with gauze. It may be noted at this point that after transection of any vessel there is no retraction, and, therefore, an accident resulting in hemorrhage is easily controlled. After this liver aspect of the gall bladder has been cleared of vessels to the distal portion of the cystic duct, there will be apparent one or two ties at the peritoneal edge, the "danger area" not having been encroached upon. Except for an occasional posterior branch or one coursing along the duodenal aspect of the cystic duct, the cystic artery has now been ligated and offers no further difficulties. This area then remains completely cleared to the junction of the cystic duct with the gall bladder.

Employing gauze dissection, the anterior aspect of the cystic duct and a sufficient length of common and hepatic duct are demonstrated. No sharp dissection is done. Up to this point in the operation no harm could have been done to any structure.

Using a tooth-free thumb-forceps, the cystic duct is gently elevated and with gauze dissection the posterior aspect of the duct is freed from its connective tissue base, from the gall bladder to the first point of serious resistance, otherwise to the common duct. Any suspicious tissue or vessels are left untouched. There then remains but a thin layer of fibro-nerve tissue connecting the duct, in its full length, to the "danger area," which has not, up to this point, been molested (Fig. 2). The result is a cleared cystic duct, being bound only on the liver aspect. A puncture is not made through this leaf of tissue. Such a

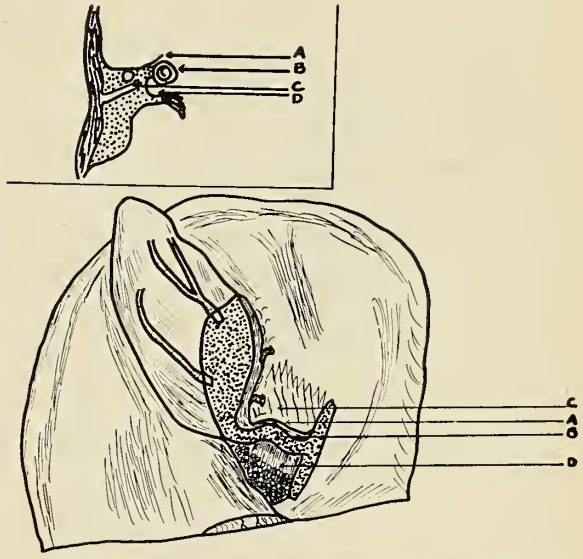


Fig. 2. (*A*) Peritoneum freed from cystic duct only. (*B*) Cystic duct freed except for restraining leaf of tissue attached to its liver aspect. (*C*) "Danger area" covered with peritoneum. (*D*) Tissues freed posterior to cystic duct.

procedure is, I believe, a source of danger and accident. Though it appears thin and harmless this narrow area may contain important vascular and ductal structures.

The cystic duct is doubly clamped *at its junction with the gall bladder.* The points of the clamps face the liver, and do not extend beyond the duct. Transection is then carried nine-tenths through, and no farther. Gentle tension results in a tearing process completing the transection. Up to this stage there has still been no possibility of injuring vital structures, no matter what anomalies are present.

Most gently, the duct is freed from its last restraining tissues, freeing it from the "danger area." If during this procedure an obstruction is encountered at any point which does not separate with the gentlest pressure, one can feel justified in ligating at this point, unless thorough inspection promises safety in continuing. If such be the case, the duct is freed to the common duct. In choosing the point at which separation shall cease, one should consider only the present threat to the patient, rather than the remote possibility of the reformation of a small false gall bladder. The

cystic duct having been fully freed, it may be ligated at any point desired in complete safety (Fig. 3).

Following the above, the first steps in the freeing of the gall bladder are done with gauze dissection, seeking for anomalous vessels and ducts. At this point I wish to warn the reader that if any large vessel is encountered it should not be hurriedly clamped in the belief that it represents a posterior branch of the cystic artery. Rather, it should be carefully preserved until the dissection reaches the fundus or until it is proved that the vessel leaves the liver bed and enters the gall-bladder wall. On two occasions I have seen an artery course nearly to the fundus before entering the liver. It is also important to bear in mind that transection of these vessels results in forceful retraction. It is, therefore, best to slip a tie under the vessel, and transect some distance fundalward.

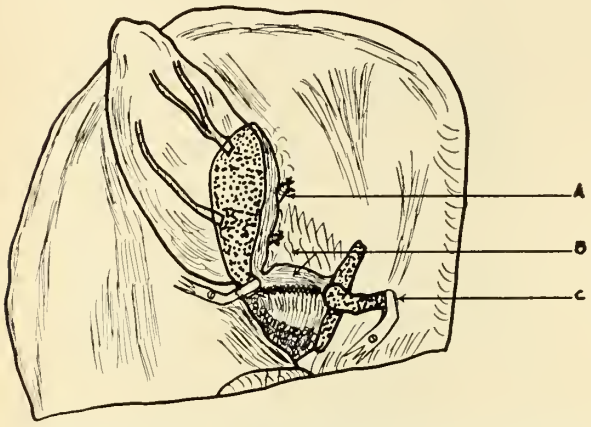


Fig. 3. (*A*) Vessels ligated on the gall bladder and wiped off. (*B*) "Danger area." (*C*) Completely freed cystic duct ready for ligation at point desired, without necessity for tension or for preliminary clamping.

At this point I wish to offer a suggestion, which, however, I do not consider a substitute for compression of the hepatoduodenal ligament. In case of hemorrhage an excellent hemostat is formed by the use of the thumb and first finger. No harm is done, and it is surprisingly easy to carry a suture around them.

Discussion

I feel the reader will agree, in following the steps of the procedure, that at any time abnormalities are present they will become clearly apparent prior to accidental injury, occasioned by doubt in the surgeon's mind as to what tissues he is transecting. He is at all times working as far from danger as possible, and approaching it by safe methods. He never enters the "danger area."

This work has been presented with the principle in mind that there is no measured, correct distance for ligation of the cystic duct. Rather it should be ligated at a point which guarantees safety to the patient.

My desire has been to impress the reader with the fact that gall-bladder surgery is fraught with catastrophic possibilites, and that each step must be executed circumspectly.

Lastly I believe that the will to complete a cholecystectomy should be subordinated to the wish to carry the patient safely through the operation. Therefore, if any particular case presents not easily comprehensible situations, cholecystostomy is the proper procedure.

Conclusions

The writer feels that the efforts of surgeons in outlining techniques for the avoidance of accidents in gall-bladder surgery have been incomplete and even misleading to the occasional operator.

A procedure has been presented which has served the writer well for several years, and which he believes will greatly assist the occasional operator in this type of surgery.

The paper has been limited to a discussion of cases presenting the need for only a simple cholecystectomy.

There has been no mention of a cholecystectomy commencing at the fundus. In uncomplicated cases this is unnecessary. In difficult cases it admits of at least as much and probably more danger than the procedure outlined.

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History of Medicine In Minnesota

HISTORY OF MEDICINE IN NICOLLET COUNTY

(Continued from the May issue.)

Jones, William Alexander, was born in St. Peter in 1859 and was educated in the St. Peter public schools. He entered the medical department of the University of the City of New York, being graduated in 1881. He served as intern at the St. Peter hospital from April, 1881, until December of the following year. He was elected secretary of the Minnesota Valley Medical Association in April, 1882. After taking postgraduate work in New York and abroad, he located in Minneapolis and specialized in mental and nervous diseases. In 1888 he was appointed lecturer on nervous diseases at the University. He was, for many years, the editor of the *Journal Lancet* and, for a long period, served on the State Board of Health. He was a member of the Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association.

Justice, O. M., was assistant physician at the St. Peter hospital, commencing work in July, 1897, and remaining until May, 1898, when he began to practice in Waterville, Le Sueur County. In June, 1899, he located in St. Peter, succeeding Dr. Ranson.

Kennedy, R., came to Nicollet County in 1849.

Kilborne, Arthur F., was born in Keokuk, Iowa, in 1858. He was graduated from the high school of that city and entered the medical department of the University of the City of New York, being graduated in 1883. After graduation he spent a year or more in Word's Island Hospital for the Insane, in New York. In December, 1884, he began work as assistant physician at the St. Peter Hospital. In June, 1889, he was appointed superintendent of the Rochester Hospital for the Insane, where he remained. He was a member of the Olmsted County Medical Society, the state and national association and the American Medico-Psychological Society.

Kranz, C., practiced in Nicollet, Nicollet county, in the eighties and nineties. He held an exemption certificate.

La Dow, J., came to St. Peter in 1865. In April of that year he was appointed assistant surgeon in Brackett's Battalion at Fort Rice, but returned to St. Peter a few months later. In October, 1867, he accidentally shot and killed himself. He was born in New York and had practiced in Sandusky, Ohio, and in Wisconsin. He was fifty-three years old at the time of his death.

Le Boutellier, C. W., was in St. Peter in 1862 as surgeon of the Ninth Regiment, Minnesota Volunteer Infantry.

Lehnert, Henry C., located in St. Peter in September, 1865. He was a homeopath and came with recommendations from Chicago. He stayed in St.

Peter a short time, returned to Illinois and was preparing to move back to St. Peter when he died at Mt. Vernon, Illinois.

Lincoln, W. L., of Wabasha, took charge of the St. Peter Hospital in the summer of 1879, during the absence of Dr. Bartlett.

Mallison, Elizabeth C., was the first woman assistant physician at the State Hospital for the Insane at St. Peter. Her term there was from March, 1890, until May, 1893, when she left to accept the position of first assistant in the women's department of the Western Pennsylvania Hospital for the Insane, at Dixmount, at a salary of $1,200 per year. Dr. Mallison was born in New York, entered the Women's Medical College of Pennsylvania and was graduated when she was about twenty-two. She went to San Diego, California, and built up a good general practice before coming to St. Peter.

Mayo, W. W., (for Nicollet county). In the spring of 1856 he moved his family to Lake Prairie township, near St. Peter, in Nicollet county, where they lived on a large farm, although not as farmers, for three years. He practiced medicine and supplemented with other occupations. In 1859 he moved his family to Le Sueur and, in 1863, from Le Sueur to Rochester where they settled permanently.

Merrill, Rose Marie, of Mankato, began service as an assistant physician at the St. Peter Hospital in June, 1900, and remained until June, 1901.

Merritt, George F., was born in Dansville, New York, in 1846, and was educated in the public schools of Rochester, New York. In 1856 he moved, with his parents, to Iowa, attending public school and college in Burlington until 1868. In 1872 he was graduated from Rush Medical College and, in May of the same year, commenced practice in St. Peter where he remained until his death in October, 1921. The doctor was a member of the St. Peter school board and coroner of Nicollet County for many years. He also held the position of United States pension surgeon for several terms. He was one of the founders of the Minnesota Valley Medical Association and, excluding the years 1894-95 and 1895-96, was treasurer during its entire existence. After the Minnesota Valley and the Southern Minnesota Medical Associations combined, he continued in the office of treasurer. He was a member of the Nicollet County Medical Society, the Nicollet-Le Sueur Medical Society, the state and national associations. He also belonged to various fraternal orders—the Masons, the AOUW and the Legion of Honor.

Mueller, Alfred, (see Washington and Brown County biographies).

McCohlom, C. A., practiced in St. Peter in 1871.

McCullough, William B., came from Indiana to St. Peter in the spring of 1860 and remained several years before moving to California where he died in the summer of 1868.

McIntyre, George Wesley, a native of Cleveland, Ohio, was born in 1853. He attended school in Wisconsin and Ohio and was graduated from the Minnesota College Hospital in 1883. He also studied at the University of New York and the New York Polyclinic. In October, 1883, he began work as an assistant physician at the St. Peter State Hospital, continuing until May, 1884. He then began to

practice in St. Peter. He was appointed to the local board of health and, for many years, he served as health officer. In August, 1889, he began his second term as assistant physician at the State Hospital and remained there until May, 1893, when he returned to general practice. In 1898 he was appointed a member of the State Lunacy Commission and served one term. Dr. McIntyre continued in active practice until his death, July 11, 1920. He was a member of the county medical society, the Minnesota Valley Association, the state and national associations.

Nelson, J. R., came to St. Peter in 1871. His card, appearing in the *St. Peter Tribune* January 25, 1871, announced his office to be with Dr. J. W. Daniels. It is unlikely that he stayed for any great length of time. He was a graduate of the New York College of Physicians and Surgeons and had practiced in New York.

Nicholson, David A., was born July 19, 1871, on Prince Edward Island, Canada. He entered the Department of Medicine of the University of Minnesota, being graduated in 1897, and served as intern for one year in the Asbury hospital, Minneapolis. He practiced medicine in Olivia, Minnesota, in 1898, and the following year moved to St. Peter. From 1899 until 1904 he served as assistant physician in the St. Peter Hospital. He then moved to Seattle, Washington, where he specialized in mental and nervous diseases. He is a member of the Washington State Medical Association and the American Medical Association.

Page, Frank W., was a graduate of Burlington Medical College in Vermont and had served in hospitals in New York before coming to St. Peter in 1866.

Pehrsoon, John, came to St. Peter in April, 1875, and remained until October, 1877, when he moved to Minneapolis. His office, while he was in St. Peter, was with Dr. A. W. Daniels. In 1883 he was made lecturer on obstetrics at a new medical college in Minneapolis, the College of Physicians and Surgeons in Minneapolis. Later he moved to Duluth.

Pratt, Calvin, came to St. Peter in 1865 and probably remained about two years. In January, 1868, he was physician on a steamer running between Boston and Liverpool. He was a graduate of Harvard.

Putnam, E. C., was born in Mt. Sterling, Illinois, June 18, 1853. He received his early education in Illinois. He was graduated from the Louisville Medical College in 1875 and began to practice medicine in Cooperstown, Illinois. He remained there for one year. Later he practiced for two years in Kansas. In August, 1881, he located in Nicollet, Nicollet County, where he remained until March, 1883, when he moved to Decatur, Illinois. He was probably the first regular physician in Nicollet.

Putnam, Marion, was in Nicollet in 1878 and 1879. It is not known whether he was a regular physician.

Ranson, George, was born in Dodge Center, Minnesota, his father being one of the oldest practitioners in that section of the country. In February, 1898, Dr. Ranson came to St. Peter and took over the office of Dr. D. B. Collins who had just died. He was a member of the Minnesota State Medical Association. He continued to practice in St. Peter until his sudden death in 1899.

Ranson, Mary E., was born in Dodge Center, Minnesota. Her term as assistant physician at the St. Peter Hospital began in 1898 and she continued her duties there until June, 1900. In September of the same year she married Dr. A. F. Strickler and moved to New Ulm.

Ray, C. Wilbur, was born in 1856 and was graduated from the Bennett Medical College in 1885. He practiced in various parts of Minnesota and, in 1893, was in Owatonna, where he remained several years. In 1896 he located in Nicollet, Nicollet County, succeeding Dr. Joseph Wicke, whose stock of drugs and medicines he purchased from the doctor's widow. He was, for a time in 1896, the editor of the *Nicollet Leader*. He spent the summer of 1899 visiting Boston hospitals. The following year he moved to California. He died in Los Angeles in 1913. He was a member of the Minnesota Eclectic Medical Association and served as its secretary for many years.

Robb, C., of Pittsburgh, Pennsylvania, came to St. Peter in August, 1856, and bought a block of business lots. At that time he intended to remain in St. Peter, but it is doubtful that he stayed or practiced there.

Shantz, Samuel E., was the first superintendent of the St. Peter Hospital for the Insane. He was a native of Ithaca, New York, and served as assistant physician at the Hospital for the Insane in Utica, in the same state, for six years. In October, 1866, he came to St. Peter to assume control of the hospital, but served only two years, for he died of typhoid fever in August, 1868. A memorial window in the Church of the Holy Communion honors his brief work in St. Peter.

Scott, M. W., practiced in St. Peter about 1870. Later he moved to Windom, Minnesota, and, in 1878, was to be found in Henderson. He was elected to membership in the Minnesota State Medical Association in 1878.

Skinner, Chauncy Morgan, was born in Hartland, Wisconsin. He was graduated from Rush Medical College and, after receiving his degree, spent one year as an intern in the Cook County Hospital in Illinois. He then practiced medicine in Minneapolis where he owned a drug store. In 1899 he located in St. Peter where he built up a large practice and was elected Nicollet County coroner for several terms. He was an enterprising practitioner and had a private telephone service with Kasota, answering all calls from that town. In the fall of 1891 he rented four rooms in the Amundsen building and fitted them up as a private hospital in which the patients could employ any physician they chose. In 1894 he attended medical lectures in Chicago. In November, 1896, he moved to the town of Nicollet, as a result of the death of Dr. J. Wicke and remained for about one month. After that he returned to his native town of Hartland where he practiced until his death several years later. The doctor was a prominent Mason, a great rifle shot, and inspector of small arms in the Minnesota National Guard. He was a member of the Nicollet County Medical Society and the Minnesota State Medical Association.

Strathern, Fred P., was born in Rich Valley, Minnesota, in 1869. He attended school in Hastings and, in 1890, he entered the state university. He received his bachelor's degree in 1894 and a degree of master of science the following year. He received a degree in medicine in 1899 and, in September of that year, began practice in St. Peter, occupying Dr. George Ranson's old office. He has since

taken graduate work in New York and Chicago and has served on the public library board of St. Peter. He is a member of the Masonic lodge. In 1900 he was admitted to the Minnesota Valley Medical Association, which later merged with the Southern Minnesota Medical Association. He is also a member of the Nicollet-Le Sueur County Medical Society, the state and national associations.

Strickler, Abraham F., was an assistant physician at the St. Peter Hospital for the Insane, his appointment being from June, 1898, until May, 1899. In September, 1899, he married Dr. Mary E. Ranson, also an assistant at the hospital, and moved to New Ulm. A brother, Dr. O. C. Strickler, practiced in New Ulm.

Sweet, A. A., came to St. Peter from Kasota, Le Sueur County, in March, 1891, and opened a drug store.

Tomlinson, Harry Ashton, was born July 3, 1855, in Philadelphia, Pennsylvania. He received his education in the common schools and was a bookkeeper before taking up the study of medicine. In 1880 he was graduated from the medical department of the University of Pennsylvania and, for the following eight years, he practiced in Muncie, Pennsylvania. He was assistant superintendent at the Friends Asylum at Frankfort, Pennsylvania, for three years and, in 1891, began his duties as first assistant at the St. Peter Asylum for the Insane. When Dr. C. K. Bartlett resigned as superintendent in August, 1892, he was appointed to the position, but did not begin work in this capacity until December or January. Largely through his efforts, the asylum was improved and enlarged. After twenty-one years of active service, he resigned to accept the position of superintendent of the State Hospital for Inebriates at Willmar, Minnesota. His poor health and the strain of building up a new institution led to his death May 30, 1913. Doctor Tomlinson was a Knight Templar and a member of the Loyal Legion. He served on the state board of charities and corrections, served as president of the Medical Alumni Association of Pennsylvania and was a member of the American Neurological Association. He was a member of his county medical society, the Minnesota Valley and the Southern Medical Associations and the state and national organizations.

Tuomy, Clark F., was born in Ann Arbor, Michigan, where he attended the public schools and the medical department of the University of Michigan, being graduated in 1896. He was appointed assistant physician at the St. Peter Hospital for the Insane and served there from September, 1898, until September, 1906. He moved to Genesee, Idaho, and operated a successful local hospital there. He took his postgraduate work at the Lying-In Hospital of New York City and, later, at the University of Vienna. He was local physician for the Northern Pacific railroad.

Valin, Honore, D., was born in Canada in 1858. He attended the public schools and Monnoir College, Marsieville, Quebec, and then entered the medical department of the University of Vermont, being graduated in 1879. He began practice in Chicago in 1880 and remained there for eight years. He was a member of the Academy of Science, in Chicago, and assisted with the *Chicago Medical Journal and Examiner.* He also published the *American Journal of Miology* and was demonstrator of physiology at the College of Physicians and Surgeons. From 1890 to 1894 he practiced in Kankakee, Illinois, and then became the pathologist

at the St. Peter Asylum for the Insane where, with the exception of one year spent in Mankato, he remained until 1915. At this time he went to Fort Wayne, Indiana. He was a member of the Minnesota Valley Medical Association.

Wicke, Joseph, was born in Lindeweazie, Silesia, Germany, in 1852. He attended the College of Meisse and followed several occupations before deciding to study medicine. He came to the United States and, in 1885, was graduated from the Minnesota College Hospital. The following year he began practice in Amboy, Blue Earth County. In August, 1887, he moved to Nicollet, Nicollet County. Apparently he had lived in the county, probably in St. Peter, before this date. In Nicollet he enjoyed a good practice and also ran a drug store. He was president of the village council for the terms 1893-94 and 1895-96, but died October 31, 1895, before the last term was completed. He was a member of the Nicollet County Medical Society and the Minnesota Medical Association.

Winter, Elizabeth, was a physician at the St. Peter Hospital for the Insane in 1892 or 1893. In 1893 she went to India where she took charge of a hospital in Bombay. On her return, in December, 1894, she was appointed resident physician at the Friends' Asylum for the Insane at Frankfurt, Pennsylvania.

(To be continued in July issue.)

COMPULSORY VERSUS VOLUNTARY HEALTH INSURANCE

What Are the Benefits?

Compulsory

No benefits whatsoever are *guaranteed* under the Compulsory Plan. But every rosy *promise* in the political book is made!

The sponsors wrap up their promises in this typically political language: "when funds are available"—"insofar as possible"—"when facilities permit."

Services could be restricted at the whim of Administrators—but there is *no tax limit!*

The only absolute guarantee is the guarantee of *a new payroll tax—the amount unpredictable!*

Voluntary

Under Voluntary Health Insurance, 55 million Americans have specific guarantees in writing, both as to costs and benefits.

They may have freedom of choice of doctor, hospital—and type of service.

They have dependable protection from financial shock in time of illness or accident—*under the finest health care system in the world today!*

Proof of satisfaction is in the mounting millions of enrollments throughout the Nation.

Is It Good for America?

Compulsory

In every great nation which has tried government-controlled medicine — Germany, Russia, France, England—the result has been:

Second-rate medical care
Decline of medical education and research
Invasion of the patient's personal privacy
Political control substituted for medical direction
A new hierarchy of Federal administrators
Constantly mounting tax burdens
Extension of controls over other professions

Voluntary

Unfettered, American medicine leads the entire world.

It has made Americans the healthiest, strongest, best cared for people on earth.

It furnishes daily proof that there is no need to import the medical systems of a sick, harassed Europe to a strong healthy America.

The scientific advances of American medicine in conquering disease and extending life are recognized as foremost by the entire world.

President's Letter

WHAT CHANGES MINDS?

There is no set formula for making up or changing people's minds. For bents of thinking differ from individual to individual almost as much as fingerprints and blood types.

Take your friend who is vice president of a manufacturing company. It will require cold logic and dollars-and-cents facts to change the direction of his thinking. His wife, on the other hand, may react to an emotional appeal, just as intellectually phrased, but dealing with the less tangible qualities of human feeling. The superintendent of nurses at the local hospital may yield before a combined economic and humanitarian presentation.

Our present and vital job is to find the correct approach to all the persons with whom we come in contact. It is not, in essence, a difficult job, for we are able to call to our assistance the lessons of history; we can show the subtraction of tax dollars from income and we can prove that government control subtracts from the medical care level of a nation; we can unfold the dramatic story of American medical progress, a story rich in human interest and the intangibles of devotion, trust and loyalty.

Or we can ask the simple questions: Do you value your health and the health of your neighbors and fellow citizens? Do you think it's good business to pay more for medical care and get less?

It is imperative that we avail ourselves of the material being prepared by Whitaker & Baxter, the public relations counsel hired by the American Medical Association, so that we are familiar with the facts and their implications in every phase of thought and endeavor.

Then we must faithfully transmit this information, in the form and manner most effective for each individual. It is only in this way—by the active and sincere participation of every member—that compulsory health insurance will be rejected by the American people.

Do not ask what the American Medical Association or the Minnesota State Medical Association or your county society is doing about socialized medicine. Ask yourself what you are doing about it.



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

VITAMIN B12

THE successful isolation of B12 from liver by the research laboratory of Merck and Company and almost simultaneously by the Glaxo Laboratories in England constitutes a milestone in the story of anemia. B12 is apparently the active principle in liver and liver extracts and is so powerful that five to ten thousandths of a milligram will produce a therapeutic response in pernicious anemia.

The discovery that liver contained some active substance which caused remissions in pernicious anemia was followed by the extraction of a water-soluble substance by Cohn in 1927, known as "Fraction G." The crude extract first contained only one or two units per cubic centimeter, but more refined extracts containing ten to fifteen units per cubic centimeter were later prepared.

The preparation of folic acid and the discovery that it too produced remissions in pernicious anemia was a further step in the study of the therapy of the anemias. Its failure in the prevention or successful treatment of neurological changes accompanying pernicious anemia did not permit its substitution for liver therapeutically. Folic acid, however, has been of special value in the treatment of other anemias such as that accompanying sprue, atypical macrocytic anemia, the pernicious anemia of pregnancy, and megaloblastic anemia of infancy. In these conditions response to folic acid is often better than to liver.

B12, being the active factor in liver and liver extracts, can be used in place of liver extracts in the treatment of pernicious anemia and has the same preventive and curative qualities in the treatment of neurological complications. It is non-toxic, and intramuscular and subcutaneous injections are not accompanied by pain, both routes of administration being equally effective. It should be noted, however, that so far there has been no experience as to possible deleterious effects following the administration of large doses over a long period of time.

The dosage of B12 is 10 to 15 micrograms hypodermically or intramuscularly, once or twice a week until remission occurs. Five micrograms once a week seems sufficient for maintenance. Inasmuch as patients' needs vary, larger doses (25 micrograms) once or twice a week are occasionally needed.

Extracted originally from liver, B12 is now obtained commercially as a by-product from *Streptomyces griseus* and has been found to contain cobalt in minute amounts. The significance of the cobalt content affords a field for further investigation. Therapeutic iron is said to contain traces of cobalt. On the other hand, the giving of cobalt to pernicious anemia patients has not proven effective.

The main significance of the availability of B12 for the practitioner lies in the fact that he now has a substitute for liver extracts for use in patients sensitive to these extracts. Until the cost of B12 is reduced and it is available in larger quantity, liver extracts will continue to be the remedy of choice in the treatment of pernicious anemia. Whether B12 eventually replaces liver remains to be seen.

It is just as illogical and unnecessary to administer B12 for secondary types of anemia as to prescribe liver. The unwarranted use of liver extracts for secondary types of anemia and a multitude of other conditions does not speak well for the knowledge or intellectual honesty of the profession and does not consider the patient's pocketbook. In secondary types of anemia, iron is indicated.

HEALTH BY COMPULSION

LIFE MAGAZINE in its May 2 issue has devoted its editorial page to a trenchant analysis of what it calls the Truman-Ewing "Health by Compulsion Program." With its ever-increasing circulation here and abroad, this weekly magazine, not designed for a platform for any particular economic or social group, is an unusual developer of public opinion. The weighing of the

arguments for and against central national health insurance is well and fairly stated, albeit the AMA received no credit for delay in meeting the issue of voluntary prepaid sickness and health insurance (Blue Shield).

There is, however, on the page opposite the editorial proper, one discordant item that calls for decisive rebuttal by practicing physicians, because no other group is as competent to give testimony concerning what is meant by the need for more doctors and for their more widespread dispersal in undeveloped and thinly populated districts. Says *Life*, "All hands agree that the United States needs a lot more doctors, and at best it cannot get them nearly fast enough." Here is a place to pause and weigh in the balance the older economists' distinction between "needs and wants." There is a fundamental difference, despite the fact that, as living scales advance, *wants* do tend to become *needs*. Naturally, most normal women would *want* a nice mink coat and most normal men would naturally *want* a Cadillac car, if in either instance these supposedly advantageous items for better living could be had for the asking. Indeed there are a few who might well *want* the moon! But, what authority is there, outside of prisons, reformatories or draft boards, that is able to make decisive rulings regarding what individuals may expect in terms of their *wants?* Hence the fairness in *Life's* reference to "Ewing's jail" as applied to doctors in their work; but the joker lies in the obvious fact that if the doctor is jailed, his patients will be in there with him—all tied up together in bureaucratic Utopia, where the idea of costs never obtrudes, as Oscar Ewing so naïvely demurs in all his public interviews.

Nevertheless, the experience in Britain amply testifies that the extravagant *wants* of people, pepped up by the grandiose propaganda that most diseases may be prevented and (in early stages) cured, give the political reformer an Aladdin's lamp with a perpetual battery: health and long life without cost or personal effort—just ask for it. Vote right, and you can have health, security and plenty of time to cultivate your most compulsive and favored sins.

To purvey this quite mechanistic type of healing acquired by universal healing could well require doctors at every crossroads, comparable to the slot-machines in Nevada—a respected and legal technique for painless tax gathering in that fair state. It is this huge withdrawal of the resources and earnings of our people that threatens our national economy even more than the basic integrity of our profession. Our medical schools should be doubly and triply cautious. If this great gamble in health is ventured, watch for a stealthy advance, with grants and aids to our schools contingent upon enlarging and graduating more students. Granted that some increase is needed, just give us a decade of peace and the professional ranks in all lines will be overfilled. But, if the reformers get their way with medicine on "a slot-machine basis," where the legions of neurotic, maladjusted complainers come and drop into the slot their individual *wants*, then, obviously, quantity and not quality of medical service will be the goal.

We are committed on a national scale to the techniques and purposes of mass production; under its aegis we have become engulfed with world power. If mass action in science was able to bring atom-smashing to successful performance in waging war, why, say the unwary, should not similar breathtaking efforts in science eliminate cancer as a health hazard and even limit the encroachments of age? It is in something of this spirit of an attempt at understanding that we should meet our critics, acknowledging that medicine is not an isolated discipline, that in the vital matter of its popularity and the percentage of the population seeking its benefits, it remains less of a science than an art. To point further to the critical situation facing all groups in the field of health, the motion picture industry presently offers an interesting exhibit. It was exceedingly popular up to less than a decade ago; it seemed to have gone not only into the field of science and education but even art and morals. What has happened to it now? Long before any threatened competition had advanced materially, mass production and pure volume for volume's sake have robbed the industry of much of its great possibilities for developing a healthy population with well-adjusted minds. Applying this last thought to the "Health By Compulsion Program," taking cognizance of a large number of well-fitted young men and women now seeking entrance to our medical schools, is it not possible that a decade ago many of them would have gone to Hollywood?

E. L. Tuohy, M.D.

GOVERNMENT COMPETITION WITH ITS CITIZENS

NEW HEALTH bills are being submitted to Congress so fast that it makes one's head swim trying to keep posted on all of them. A compulsory health insurance bill known as S5, submitted on January 5, 1949, was much like the Wagner-Murray-Dingell Bills which have been before Congress each year for the past ten years. This apparently has been superseded by the so-called Thomas Bill (S1679), submitted April 25, 1949, which is just as objectionable as any of the preceding ones. Interested readers may refer to a condensation of the Bill which appeared in the May 7, 1949, issue of the *AMA Journal* (page 114). The Taft Bill (S1581) provides, in brief, Federal subsidy to the states for the medical, dental and hospital care of those unable to pay the full cost, grants for school health services, et cetera. Then there is the Hill Bill (S1456) which provides, in brief, subsidies to the states to provide hospital and medical insurance policies in voluntary prepayment organizations for those deemed unable to purchase such policies for themselves. The question immediately arises as to who shall determine ability to afford such policies.

We believe that the recent appointment of a committee by the AMA to study the many bills being proposed in Congress and to determine the attitude of the profession to them is a very wise step. Editorially speaking, we are opposed to all four of the above mentioned bills, for the simple reason that it is not the function of the Federal government to provide medical care for our citizens. Care, medical or otherwise, that must be given the indigent, should be furnished locally by cities, counties, and states and should not be subsidized by the Federal government. There should also be a limit to what charity even local governments provide.

It is high time for the citizens of our country to decide whether the growing feeling that it is the function of government to support its citizens is proper, or whether such a function is beyond the purpose of government. Our Constitution originally provided for governmental functions designed to protect the citizens from their foes, foreign or domestic, so they could peaceably work out their own destinies without interference. Under the pretext of emergencies, the government has usurped powers never originally intended. Citizens are forced to contribute to social security, and the employers are forced to contribute an equal amount, which is essentially charity. The employer is also forced to contribute to unemployment funds for his employes. And now there is strong pressure to increase the number of citizens affected by social security to include the self-employed, whether they like it or not. Federal funds are being appropriated for supplying lunches for school children. Is there to be no end to what the government is to supply for its citizens, and will it eventually provide food, clothing, housing and entertainment just as was done in Rome before its fall? An administration that is generous in its "hand-outs" is difficult to dislodge, and a continuation of Federal subsidies and spending is now leading to a deficit of some $2,500,000,000, with bankruptcy on the horizon. Federal subsidies seemed the logical procedure because the Federal government had larger sources of income. The point has been reached where Federal government spending has exceeded tax collections, and citizens are crying for relief from high taxes.

It is interesting to note that a resolution is to be submitted to the AMA House of Delegates to the effect that whereas constitutional laws are designed to protect the property and enterprises of each citizen, and whereas many governmental agencies are now in active competition with individual enterprises, with every indication of further inroads by the government, the members of the AMA petition Congress to preserve the intent and purposes of the Constitution by initiating an amendment to the Constitution providing that the United States Government shall not engage in any business, or in professional, commercial or industrial enterprises in competition with its citizens except as specified in the Constitution.

The resolution brings to the foreground the question as to whether we are to continue to become more socialistic in our economy with the government competing more and more with private industry, or whether the government is to withdraw from activities not specified in the Constitution. Many such instances are the result of laws enacted by Congress, while some may well be illegal usurpation of power unchecked by the Department of Justice. The adoption of this amendment to the Constitution would of course make it impossible for Congress to legalize gov-

ernmental activities in competition with private industry and would put an end to the competition already in existence.

We shall follow the progress of the proposed amendment to the Constitution with considerable interest.

THE STATE MEDICAL MEETING, 1949

THE NINETY-SIXTH annual meeting of the Minnesota State Medical Association, held in Saint Paul, May 9-11, 1949, has now become history. The attendance, though not as large as that recorded last year in Minneapolis, was highly satisfactory, with 1,637 physicians registering, as well as nurses, dietitians, technicians, exhibitors, members of the Woman's Auxiliary and miscellaneous, bringing the total to 3,390.

Dr. Frank J. Elias, Council member from Duluth and recently president of the Council, was chosen president-elect for 1950. Dr. William F. Hartfiel, Saint Paul, was elected first vice president and Dr. C. W. Moberg, Detroit Lakes, second vice president. Dr. B. B. Souster, Saint Paul, was re-elected secretary and Dr. W. H. Condit, Minneapolis, was re-elected treasurer. The Speaker of the House, Dr. Charles G. Sheppard, Hutchinson, and the Vice Speaker, Dr. Haddon M. Carryer, Rochester, were re-elected. Councilors L. G. Smith, Montevideo, Justus Ohage, Saint Paul, and W. W. Will, Bertha, were re-elected to represent the Third, Fifth and Seventh Districts, respectively.

Dr. George Earl, Saint Paul, and Dr. A. E. Cardle, Minneapolis, were elected AMA delegates, with Dr. W. W. Will, Bertha, and Dr. E. M. Hammes, Saint Paul, alternates.

The Southern Minnesota Medical Association award for the best scientific exhibit went to Dr. T. J. Kinsella, Minneapolis, and Dr. W. W. Johnstone, Aw Gwah Ching, for their exhibit on Surgery of Intractable Pulmonary Tuberculosis. Honorable mention went to Dr. E. A. Boyden and his assistants of the University of Minnesota Medical School for their exhibit on Prevailing Patterns and Variation of the Bronchopulmonary Segment.

Dr. E. T. Bell, Chief of the Department of Pathology at the University of Minnesota Medical School, received the 1949 Distinguished Service Award of the Minnesota State Medical Association. The award received the hearty approval of his many admirers.

The following eleven physicians throughout the state were admitted to the Fifty Club, having practiced their profession for fifty years: William R. Bagley, Duluth; Charles W. Fogarty, Saint Paul; James H. Haines, Stillwater; O. C. Heyerdale, Rochester; P. L. Holm, Wells; Charles B. Lenont, Virginia; John S. Macnie, Minneapolis; William A. Miller, New York Mills; Gustav Schwyzer, Minneapolis; A. E. J. Sohmer, Mankato; O. S. Werner, Cambridge.

Among the resolutions passed by the House of Delegates at this session, the most important was the one whereby the Minnesota State Medical Association put itself on record to "do everything in its power to prevent enactment of laws intended to provide compulsory health insurance or any similar plan which would jeopardize the health of the citizens of the United States." The House of Delegates also went on record as opposed to the extension of the Social Security Act as proposed by Committees of Congress to include self-employed individuals, inasmuch as such individuals would pay amounts greatly in excess of the value of possible benefits. The House of Delegates also took action urging members of the Association to abstain from the use of prescription blanks with druggist's name attached in the interest of good public relations. It seems that such procedure in the minds of the laity too often indicates a commercial relationship between the physician and the druggist which does not exist. The House further went on record as approving the recent legislation for the improvement of the care of the mentally ill in the state, although the bill may not have fulfilled all desirable objectives, and urged the entire medical profession of the state to co-operate in every way in the carrying out of the new program.

One resolution passed by the House constitutes quite a liberalization in our past concept of ethical public relations in the matter of professional advertising and publicity and approved the change, providing it meets with the approval of the component medical societies. Because of its importance and the possibility of repercussions, the resolution is reproduced herewith in full:

Resolution

WHEREAS, your Committee on Public Health Education believes that there is an increasing need to secure closer understanding with the press of this state, and

WHEREAS, one criticism frequently heard from the press is that the medical profession expects the press to maintain the entire burden of indirect publicity from the doctor to the public, without any remuneration, and

WHEREAS, as long as this opinion exists, your committee believes that with county medical society approval, doctors may place a professional card stating only the name, address, telephone number and office hours of the doctor in the local newspaper, the said card not to exceed one column in width and two inches in depth; and likewise a component medical society may sponsor special greetings, messages or announcements in the name of the component society, or the members thereof, and announcements, messages and other material sponsored by the component society in co-operation with other groups, now therefore

BE IT RESOLVED, that the Minnesota State Medical Association go on record as approving such cards, announcements, messages and other material, provided the same meets the approval of the component medical society.

BB GUNS

The Minnesota Society for the Prevention of Blindness, which has been sparked by some of the state's outstanding oculists, has been sponsoring a bill submitted to the Legislature in recent years to outlaw the BB gun. Oculists, particularly, are conscious of the number of eyes that are lost from accidents due to the

(Continued on Page 646)

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

HOUSE OF DELEGATES MAKES VITAL MOVES

Recognizing the importance of aggressive action in placing the medical profession beyond the reach of certain stereotyped criticisms, the Minnesota State Medical Association's House of Delegates translated some vital policy decisions into official record during the annual convention, May 9-11.

Unique among the conclusions reached by the medical governing group was a move to "secure closer understanding with the press of this state." In a resolution which admitted that "one criticism frequently heard from the press is that the medical profession expects the press to maintain the entire burden of indirect publicity from the doctor to the public without remuneration," the House of Delegates declared:

". . . as long as this opinion exists, . . . with county medical society approval doctors may place a professional card stating only the name, address, telephone number and office hours of the doctor in the local newspaper."

Only qualification in the resolution was that the card not exceed one newspaper column in width and two inches in depth.

Another type of advertising was also approved:

". . . a component medical society may sponsor special greetings, messages or announcements in the name of the component society or the members thereof, and announcements, messages and other material sponsored by the component society in co-operation with other groups."

Toward General Approval

On second look, the House found, in a time-honored business custom, another loophole for unfriendly comment from the public.

Outlining the problem, the House wrote:

"It has become a common practice, as a matter of business policy, for druggists to print prescription blanks for the convenience of physicians with the name of the drug establishment and the physician appearing thereon, and these prescription blanks are distributed to physicians and, in good faith, physicians have used these blanks freely in writing prescriptions for their patients."

Drawback to the custom, according to the House, is that "this practice has led to a mistaken and regrettable belief becoming fixed in the mind of many patients that a commercial relationship exists between the medical and pharmaceutical professions."

Members of the State Association were urged "in the interest of good public relations and the furtherance of public confidence in the high standards maintained by the medical profession as a whole" to use prescription blanks which are not identified with drug firms.

Evaluates Legislation

The work of the Minnesota State Legislature and, more particularly, the bill it passed to improve the care of the state's mentally ill, came under the scrutiny of the MSMA legislative body.

The mental health bill was received with moderate enthusiasm and annotated by the House: ". . . it may not fulfill all the desired objectives of the Minnesota State Medical Association in dealing with this problem."

Believing that something is better than nothing, however, the House of Delegates asked all doctors of Minnesota to co-operate in every way in carrying out the program and to assist with future efforts to implement existing legislation.

On National Level, Too

From the state scene, the House lifted its sights to the national level and protested against what it saw:

"Legislation is now under consideration in committees of the Congress of the United States which proposes extension of the Social Security act to include self-employed individuals. Such a measure is destructive of self-reliance in this group of individuals and such individuals would be found to pay amounts greatly in

excess of possible benefits to be derived and such legislation would constitute another step toward a completely socialistic state."

The House underlined its protest with the firm statement that: ". . . the Minnesota State Medical Association hereby expresses unalterable opposition to such legislation."

Copies of the resolution were forwarded to President Truman and to the senators and representatives from Minnesota.

To Dispel Any Doubt

The House of Delegates put its opposition to compulsory health insurance in resolution form:

"WHEREAS, under the system of private practice of medicine, the health of the people of the United States is better than that of any other people; and

"WHEREAS, voluntary, democratic ways have been found most satisfactory in meeting the need for medical care of persons in all income groups, NOW, THEREFORE,

"BE IT RESOLVED, that the Minnesota State Medical Association do everything in its power to prevent enactment of laws intended to provide compulsory health insurance or any similar plan which would jeopardize the health of the citizens of the United States."

Copies of the resolution were sent to President Truman and to senators and representatives from Minnesota who were "respectfully requested to use every effort at their command to prevent the enactment of such legislation."

CRISIS PAST; BUT IT'S ONLY FIRST ONE

Although health insurance, along with the civil rights program, has been lopped off the administration's "must" list, it's too soon to start celebrating—there'll be other sessions of Congress and, from all appearances, there'll be other proponents of compulsory health insurance, socialized medicine or whatever names the scheme adopts as it continues its unsettling path through history.

This is, assuredly, no time to relax medicine's all-out war against Federal control. Whitaker & Baxter, the public relations counsel hired by the American Medical Association, are accelerating the pace with which they produce the ammunition needed by every doctor in America to guarantee his freedom.

This material—posters, pamphlets, leaflets, letters—comes to the state office and is channeled on to every member through special mailings, the Newsletter and personal distribution. Obviously this does not or should not complete the circuit of this factual information. It will not have accomplished its purpose until it reaches a large proportion of the reading and thinking and voting public.

For Your Information

There is, of course, a certain amount of the material that is designed primarily for the doctor's own information, so that he will have quick and ready reference to the refutations that American medicine is voicing.

Among these are suggested speeches, which doctors may revise to fit individual situations, and deliver when asked to speak before various civic, service and social organizations. There is a blueprint of the campaign, citing the major objectives to be reached and an outline of the approaches being used and being contemplated for the future. Forms of resolutions against compulsory health insurance are available, too, and the doctor will find them useful when asked to serve as an adviser to a group which is formulating such a resolution. In this connection, the first of a series of lists of organizations and associations officially on record against compulsory health insurance has been prepared.

For the Public

An increasing number of brief, easy-to-read folders and pamphlets are ready now for doctors to make available in their waiting rooms or to send out with bills and other mailings:

A folder, illustrated with the famous Fildes painting of "The Doctor" and stating concisely in two parallel columns, headed "compulsory" and "voluntary," the differences between private and political medicine.

A statement by Dr. Elmer Henderson, chairman of the AMA Board of Trustees, entitled "American Medicine Replies to President Truman," printed on one sheet of paper and folded ready for insertion in the standard envelope used for sending bills.

Two attractive pamphlets have been received by the state office in quantities suitable for statewide distribution. They are: "Compulsory Health Insurance—a threat to health, a threat to freedom," and "The Voluntary Way Is the American Way," with fifty questions and answers about compulsory health insurance.

Localized Materials, Too

To supplement Whitaker & Baxter materials, the state office staff, under the direction of the

Public Health Education Committee, has prepared a selection of form speeches, containing Minnesota health and medical insurance information, news releases, rural and city editions of a tabloid, *Health News and Views,* radio scripts and other manuscripts and publications suitable for all media of communication.

In addition, the state office has gathered reprints, pamphlets and books in quantity lots which doctors may order, at no cost.

It's Not Enough

The interchange of information and literature is not enough unless the interchange is between doctors and public. This campaign is every doctor's job.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota

Julian F. DuBois, M.D., Secretary

Minneapolis Osteopath Pleads Guilty to Abortion

Re. State of Minnesota vs. George M. Wade

On June 1, 1949, George M. Wade, seventy-nine years of age, a licensed osteopath at 2103 Colfax Avenue South, Minneapolis, was sentenced by the Hon. D. E. La Belle, Judge of the District Court of Hennepin County, to a term of not to exceed four years in the State Prison at Stillwater for the crime of abortion. Judge La Belle suspended the sentence and placed the defendant on probation for two years on condition that the defendant surrender his basic science certificate and his osteopathic license for cancellation by the respective examining boards. Judge La Belle also ordered Wade to dispose of all of his medical and surgical instruments. The Court granted Wade permission to go to Tucson, Arizona, to live with a son of the defendant.

Wade was arrested on April 21, 1949, by Minneapolis police officers following the hospitalization of a twenty-nine-year-old divorcee suffering from the after effects of a criminal abortion. The patient gave a statement in which she alleged that she paid the defendant $300 for the abortion. The abortion was performed by the defendant by packing the uterus. When arraigned in Court on April 23, Wade waived a preliminary hearing and was held to the District Court under bail of $5,000 which was not furnished. On April 27, Wade was arraigned in the District Court of Hennepin County and entered a plea of not guilty. He was remanded to jail in default of $5,000 bail. The case was set for trial for May 5, 1949, but on May 4, Wade came into Court and entered a plea of guilty. The case was then referred to the probation officer for a pre-sentence investigation. Evidence that the defendant had performed other criminal abortions was furnished by the Minnesota State Board of Medical Examiners to the probation officer. A request was also made by the Medical Board that the defendant be required to surrender his basic science certificate and his osteopathic license for cancellation as a condition to the suspension of any sentence. The defendant told the Court that he was born in Nashville, Tennessee, on September 7, 1869, and that he had been a resident of Minneapolis since 1888, graduating from the Northern Institute of Osteopathy in 1900.

THE VALUE OF THE RORSCHACH TEST

(Continued from Page 624)

ship, but suffice to say this important therapeutic lead which was uncovered by the Rorschach analysis led the way to our psychotherapeutic approach. Mrs. O. was seen for three hours a week for four weeks, and when she left for her home town she felt very much better. Several letters from her indicated continued improvement after her return home. Two weeks ago she reported in person and stated that she was entirely free from pain, had gained weight, was active socially and enjoyed life.

This was a case in which, on the basis of the psychosomatic history alone and without special psychiatric investigation, we would have been unable to tell whether the patient's pain was psychogenic or whether she still had some organic somatic disturbance which was reflecting itself in the psyche as a mental depression. On the basis of the Rorschach diagnosis, psychotherapy was instituted and the patient was relieved of all of her physical and mental symptoms. In Case 1 psychotherapy would have been to no avail. In Case 2 it brought results that were eminently gratifying to the patient and, incidentally, to the physician.

Conclusions

1. The Rorschach test is a projective technique which furnishes us with a three-dimensional view of the personality structure.
2. The Rorschach test furnishes us with useful information and aids in diagnosis, prognosis, and treatment.
3. While most Rorschach tests are administered by clinical psychologists who are not involved in the treatment of the patient, it is advantageous both to the patient and to the psychiatrist if the Rorschach test is administered by the therapist.

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STATEWIDE PASTEURIZATION NEXT YEAR

All milk, cream, and other fluid milk products sold in Minnesota on and after July 1, 1950, must be pasteurized (Chap. 403, Laws of 1949). Hitherto, only local pasteurization ordinances have been in effect, and these have been operative in fewer than thirty communities. The date set by the new law allows time for setting up pasteurization machinery in communities that do not yet have it.

Minnesota Academy of Medicine

Meeting of February 9, 1949

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, February 9, 1949. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 p.m. by the President, Dr. John Lepak.

There were fifty-seven members and eight guests present.

Minutes of the December and January meetings were read and approved.

There being no business to be taken up, the scientific program followed immediately.

SOME CONSIDERATIONS IN INTESTINAL ANASTOMOSIS

CLARENCE DENNIS, M.D.
Minneapolis, Minnesota

Even a superficial inspection of the methods of present-day gastrointestinal surgeons shows them to be divided into a larger group who employ the old standard open anastomosis and a smaller one who use the closed or "aseptic" technique. Some value accrues from a brief review of the relative merits of the two disciplines.

Although the work of Halsted,[5] Mall,[8] Parker and Kerr,[13] Gatch,[4] and Holman[6] had featured the desirability of a clean method of intestinal anastomosis, one which would permit apposition of entirely unsoiled serosal surfaces for the purpose, it was not until the introduction of the two-clamp closed method by Martzhoff and Burget[9] in 1936 that any readily feasible means to achieve this end was presented to the clinical surgeon.

For decades prior to 1936 it had been almost universal practice to open the two segments of bowel to be joined, and to make the approximation by two or three layers of running catgut suture about these openings. In the case of the small intestine, in particular, side-to-side anastomoses in this manner had been necessitated by the observation that end-to-end procedures invert enough bowel wall to produce partial or complete obstruction at the suture line. The two unused ends were customarily closed by catgut inversion to produce blind pockets. Such a method was necessarily associated with spillage of bowel content and serosal soiling, even though elaborate techniques were developed to wash out the lumen and to try to limit the contamination to the immediate area.

Through the work of Poth and Knotts[11] and of Ravdin and Zintel,[14] among others, the past few years have shown that the number of bacteria in the bowel can be cut from over 200 million per gram of stool to less than 1,000, and that in some cases the bowel content could be rendered literally sterile. The stool under some circumstances, therefore, can be rendered far more nearly sterile than is pasteurized milk. In those cases which achieve such a reduction in fecal bacterial content, Poth[10] and his associates have shown that the healing at the suture line is almost free of inflammatory reaction and that mucosal continuity is established far more quickly than in unprepared cases, regardless of whether open or closed methods of anastomosis have been employed.

If, as this work has shown, the bowel can be prepared so that healing is by "primary intention" rather than "secondary," and if this is true regardless of whether an open rather than a closed method has been employed, then is there any reason for preference of the closed over the open method in routine elective surgery on the bowel?

Perhaps a satisfactory answer to this question can be best obtained by study of the situation seen in ileac obstruction. Here the surgery is ordinarily performed as an emergency measure, and sterilization of the bowel content is out of the question. Furthermore there is good evidence that the bacteria which one finds in such cases are more virulent than those seen in unobstructed intestine.[3]

Owings and Smith[12] obstructed the terminal ileum in dogs. At varying intervals thereafter they restored continuity by open anastomotic procedures, in which they were well trained and experienced. They found in a large series that any degree of success required the resection of all distended bowel above the obstruction to a point showing (1) normal color, (2) good muscular response to mechanical stimulation, and (3) good resistance to the surgeon's needle in the substance of the gut wall. Even when these requirements were satisfied, they reported a mortality rate over 30 per cent.

In the closed anastomosis one places narrow clamps across the ends to be sutured together and cuts the bowel (usually by cautery) very close to these clamps, which remain to hold the ends and to keep them closed during the placement of sutures. With proper technique, the clamps may be removed and the sutures drawn snugly and tied without loosening of the mucosal seal produced by the clamps. This seal may be easily loosened by manipulation at the end of the procedure.

In order to evaluate the closed method as against the open, a series of dogs was obstructed as Owings and Smith had done.[12] After a period varying from 3 to 8 days, continuity was restored by end-to-end closed anastomosis.[1] The mortality rate was 6¼ per cent, the single death being due to an obvious error of manipulation. These results were seen in spite of a decision not to resect bowel not satisfying the requirements of Owings and Smith as to viability. A small series restored to

From the Department of Surgery, University of Minnesota Hospitals.

Supported by a Research Grant from the Graduate School of the University of Minnesota.

continuity by the open method suffered a 50 per cent mortality.

Microscopic studies of the anastomatic areas in these dogs showed the healing process to proceed as if obstruction had not been present in those cases in which the closed method had been used. Following the open method, on the other hand, there was violent inflammatory reaction.

An observation of much interest is concerned with the size of the inturned cuff of tissue. In the open anastomoses it was wider and therefore a greater factor as a threat of intestinal obstruction. This same difference was observed in gastroenterostomies in dogs.

Finally, collected data indicate that the mucosa heals in six or seven days if a single layer of silk interrupted sutures is employed, but not until sixteen or seventeen days if a layer of running catgut is left beneath the silk. Furthermore, the presence of the running catgut has been found to be associated with delay or prevention of flattening out of the internal ridge at the suture line. Omission of catgut from the suture line is therefore a logical step.

What is the meaning of these observations in relation to the main question? It is undoubtedly true that if the bowel is already almost free of bacteria, as in gastrectomy for benign ulcer, or after suitable preparation with sulfasuxidine and oral streptomycin, the choice between methods is unimportant and dependent upon the preference of the surgeon. If the case is one in which it is not possible to undertake such preparation or in which such measures are unsuccessful (which occurs in a large portion of cases),[7] then the closed method is much safer.

The closed method with a single layer of interrupted silk sutures is more difficult to learn to do well than the open, and one requiring fairly frequent use to retain the desired dexterity, but with this familiarity it is one which can be done with less use of time and less trauma than the open method.[2] To the author it seems best to use this method routinely in order to retain the facility which will prove essential in the occasional unprepared case. It seems best to the author to use sulfasuxidine preparation regardless of the type of anastomotic technique, and to use the closed method whenever possible in view of the frequent failures of antibiotic preparation.

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Discussion

Dr. Walter A. Fansler, Minneapolis: It was a pleasure to hear this fine presentation and I am always stimulated by Dr. Dennis' thoughts on surgical subjects. Unfortunately for a discussant, Dr. Dennis presents a situation in such a complete and unbiased manner there is little left to add and not too much room for difference of opinion.

Dr. Dennis has stated that he uses both the closed and open methods of anastomoses but that he usually employs the closed method. He has given some very valid reasons for this choice. I think each surgeon is entitled to use the method he prefers and can do the best. Contrary to Dr. Dennis, I have the past three years been employing the open method of anastomosis though I do not say that an occasion could not arise where I might revert to the closed type.

So far as I know, the chief objection voiced against the open method is the possibility of infection and peritonitis. If this is the case, it would be well to consider what the chief causes of postanastomosal peritonitis may be. Is it due to contamination at the time of the operation? I personally do not believe this to be the case. It should be pointed out that contamination is a matter of degree. No type of anastomosis is actually aseptic and, in some instances, contamination may be quite extensive. It must be admitted that the degree of contamination is usually less in the closed type of anastomoses. I would like to point out that the peritoneum is usually able to take care of a rather extensive single contamination without a general peritonitis resulting. Even in the presulfonamide pre-antibiotic days I do not believe that fatal peritonitis often resulted from a single contamination occurring at the time of anastomosis. It is my opinion and experience that, with the proper use of sulfonamides and antibiotics, serious or fatal peritonitis will not result from contamination occurring at the time of anastomosis. At least we have had no deaths from this cause in the past three years.

If this is true, what is the factor in anastomosis which may lead to serious or fatal results? I believe this to be a leak at the suture line which may produce a gross amount of contamination and one which may continue over a period of time. This leak may be caused by necrosis of the suture line caused by improper evaluation of the blood supply to the area of anastomosis, an improperly done anastomosis, or the pressure of gas or stool upon an anastomosis with an inadequate lumen.

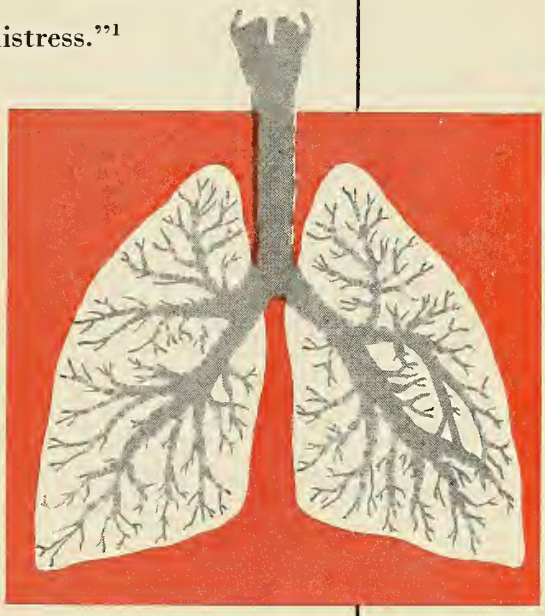
I believe the average closed anastomosis results in a smaller immediate lumen than in the case of the open method. The resulting edema and swelling which occurs for a few days postoperatively may block off the opening entirely. At least in my cases of closed anastomoses I occasionally saw distention with active peristalsis lasting several days before gas or feces were passed per rectum. Uncertainty as to how well the suture line and blood supply of anastomoses were standing up under this strain was always a source of anxiety.

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(Continued on Page 646)

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

1. Murphy, F. D.: Treatment of Cardiovascular Emergencies in the Home, Wisconsin M. J. *42*:769 (Aug.) 1943

(Continued from Page 644)

technical standpoint, I am better able to judge the adequacy of the blood supply, to apply the anastomosing sutures more easily, and be more sure of a large lumen. This is particularly true of anastomoses done low in the pelvis.

If these assumptions as to the cause of peritonitis are correct, it would seem that we should not concern ourselves too much about the question of contamination at the time of anastomoses but should concentrate our attention upon a well-done anastomosis which has large and adequate lumen, and a blood supply which will insure proper nourishment to insure healing of the suture line. It is my belief that these three essential conditions can be more easily and surely accomplished by an open type anastomosis, at least in the hands of the majority of surgeons.

My remarks thus far have been intended to deal with those cases where no high degree of obstruction is present. While we ultimately employ the open method of anastomosis in all cases, there is a different method of approach in cases with severe obstruction. In the case of the small bowel, sufficient decompression can usually be accomplished by the Wangensteen suction or its several more recent modifications so that an open anastomosis can be done satisfactorily. In colon cases, where there is a complete obstruction or a very small lumen with accumulated feces above, a temporary colostomy is done above the site of the obstruction. If the amount of stool is small or liquid and there is not too much edema and thickening of the bowel wall, the gut may be decompressed with a trochar and suction and anastomosis done at once. Where a preliminary colostomy is done it is our custom, after a suitable interval, to do an open anastomosis at the site of the obstruction and to close the colostomy during the same surgical session, thus eliminating a third procedure.

In closing, let me again compliment Dr. Dennis upon his very fine presentation and express my appreciation to Dr. Wangensteen for his fundamental contributions which have been a great factor in reducing the mortality in intestinal surgery. Any difference of opinion I may have with the essayist is entirely a personal feeling as to method. However, to discuss the matter in an academic, non-personal, non-acrimonious manner is always pleasant, interesting and instructive.

Dr. M. B. Visscher, University of Minnesota: I am very pleased to hear Dr. Dennis' presentation for many reasons. I think the practical problems, aside from those of rotation of the gut for anastomosis, are not primarily physiological problems, but rather have to do with bacteriology.

Dr. R. L. Varco, University of Minnesota (by invitation): Dr. Dennis has given a scholarly and unprejudiced exposition of the advantages as well as limitations of both the open and the closed types of intestinal anastomoses. My personal preference is for the latter, though this may stem as much from provincialism as from any deep-rooted conviction. Upon occasion, particularly in the newborn where the bacterial flora is of relatively low virulence or even absent, the decision to perform an open anastomosis because of the lumenal dimensions, may be a wise one. An example of the other extreme is represented by an adult suffering from unrelieved high-grade small bowel obstruction. Here, the gut harbors myriads of pathogenic organisms and the performance of a closed type of anastomotic procedure decreases the hazards from inadvertent or coincidental soiling during the operation. In general, I believe that a man, his judgment, and his skill are wiser arbiters of a patient's surgical predicament than any attitude of inflexible adherence to a single technique.

Dr. Dennis, in closing: I wish first to thank the discussors of my paper. Usually as I listen to Dr. Fansler talk, I find that he has approximately the same ideas as I. If we do a closed anastomosis in the descending colon in a patient who already has a transverse colostomy, and if we defer the closure of that colostomy for a period of time, we have found on many occasions that the stoma of the anastomosis becomes progressively smaller as time passes. We have sometimes been concerned about the closure of the colostomy for this reason. I would rather relish having some idea from Dr. Fansler as to whether or not he has seen this same situation in open anastomoses made in the descending colon. In general, it seems to me that, except for the emergency indications that have been covered in the paper, the surgeon is best advised to do that type of anastomosis which he finds he can do most easily.

The meeting was adjourned.

A. E. Cardle, M.D., *Secretary.*

BB GUNS

(Continued from Page 639)

unsupervised use of the BB gun by youngsters. Until this year the efforts of the Society have been ineffectual.

Active in drawing up the proposed bill this year for the Minnesota Society for the Prevention of Blindness were Mr. Amos S. Deinard, past president of the Society, Mr. Louis W. Hill, treasurer, and Joseph Prifrel, Jr., a past board member. Although the Society was particularly interested in an act completely outlawing the BB gun, it considers the passage of the so-called Sportsman's Bill (H. F. 930), which classifies the BB gun as a firearm, a step forward in its efforts to reduce accidents.

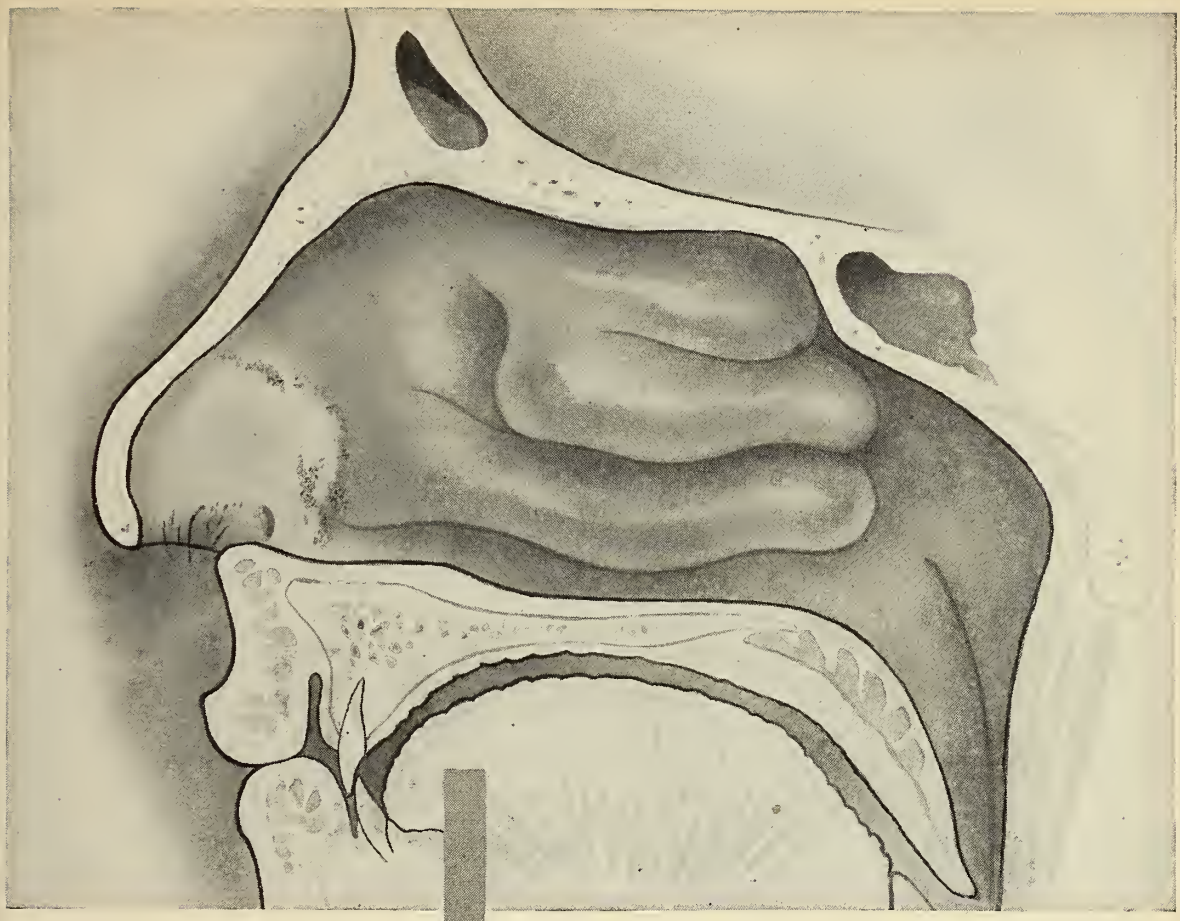
In brief, the bill provides:

It is a misdemeanor to aim firearms, whether loaded or not, at or towards any human being or to wilfully discharge any firearm, air gun or other weapon . . . in a public place or in any place where there is any person to be endangered, although no injury actually results.

No minor under the age of 14 years shall handle or have in his possession or under his control, except while accompanied by or under the immediate charge of his parent or guardian, any firearm or air gun of any kind for hunting or target practice or any other purpose. Every person violating any of the foregoing provisions, or aiding or knowingly permitting any such minor to violate the same, shall be guilty of a misdemeanor.

No person, in any city in this state, shall sell, give, loan, or in anywise furnish any firearm, or air gun, or ammunition, to a minor under the age of 18 years without the written consent of his parents or guardian, or of a police officer or magistrate of such city.

Any person who violates any provision of this section is guilty of a misdemeanor.



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Reports and Announcements

CIVIL SERVICE APPOINTMENTS

The United States Civil Service Commission has announced a Medical Officer examination for filling rotating intern psychiatric resident, and surgical resident positions in St. Elizabeths Hospital, Washington, D. C. The salaries for rotating interns are $2,200 for the first year and $2,400 for the second year; the salaries for psychiatric resident range from $2,400 to $4,100 a year; and for surgical resident, from $3,400 to $4,150.

To qualify, applicants for the rotating intern positions must be third- or fourth-year students in an approved medical school. Applicants for psychiatric resident and surgical resident positions must be graduates of a medical school with the degree of doctor of medicine, and must have completed a full year in an approved rotating internship. In addition to the above requirements, applicants for appointment as surgical resident must have completed three full years as residents-in-training in surgery in an approved residency. No written test is required for this examination. The maximum age limit of 35 years is waived for persons entitled to veteran preference.

Further information and application forms may be obtained at most first- and second-class post offices, from civil service regional offices, or from the U. S. Civil Service Commission, Washington 25, D. C. Applications will be accepted by the Commission's Washington office until further notice.

UNITED STATES AIR FORCE MEDICAL SERVICE

Organization of the United States Air Force Medical Service within the Department of the Air Force has been announced.

Highlight of the plan for the service is the provision assuring career opportunities for personnel. Housing for medical officers and their families, stability of assignment and opportunities for medical and scientific advancement are features of the plan.

Medical specialists are assured of opportunities for advanced training in both clinical medicine and research in aviation medicine. Professional facilities of general hospitals and laboratories, approved civilian institutions and air force facilities will be used to provide regularly spaced training tours for members of the air force medical service.

The plans are designed to correct major objections of professional people to a career in the armed forces. Medical officers will be given every opportunity to pursue their specialties and doctors and dentists who volunteer to serve for more than one year will continue to receive the extra $100 a month. Officers, nurses, and enlisted technicians who qualify and are assigned flying duties will receive additional hazard pay.

The service will be manned by both regular and reserve officers, reserve officers having the prerogative of serving limited periods of active duty. Civilians desiring regular or reserve commissions may apply directly to the Surgeon General, U. S. Air Force, Washington, D. C.

Recognition of prior professional training and previous military service will be given in original appointments. Regular and reserve officers who have had duty with the army air force may apply to the surgeon general for transfer to the new air force medical service before July 26.

RESEARCH FELLOWSHIPS AVAILABLE

The American College of Physicians has announced that a limited number of fellowships in medicine will be available from July 1, 1950, to June 30, 1951. The fellowships are designed to provide an opportunity for research training either in the basic medical sciences or in the application of these sciences to clinical investigation. They are for physicians who are in the early stages of preparation for a teaching and investigative career in internal medicine. Assurance must be provided that the applicant will be acceptable in the laboratory or clinic of his choice and that he will be provided with facilities for the proper pursuit of his work.

The stipend will be from $2,200 to $3,200.

Application forms may be obtained from the American College of Physicians, 4200 Pine Street, Philadelphia 4, Pennsylvania. They must be submitted in duplicate not later than October 1, 1949. Announcement of awards will be made in November, 1949.

COURSE IN GASTROINTESTINAL SURGERY

The National Gastroenterological Association, in cooperation with the Postgraduate Division of Tufts Medical College School and the First and Second Surgical Services of the Boston City Hospital, announces a course in gastrointestinal surgery to be given at the Boston City Hospital on October 27, 28 and 29.

The course will be under the direction of Dr. Owen H. Wangensteen, professor of surgery at the University of Minnesota Medical School, assisted by Lord Alfred Webb-Johnson, president of the Royal College of Surgeons, London, and members of the surgical staff of the Boston City Hospital.

Enrollment in the course is limited to 250, with the fee $35 per person. Veterans may take the course under the GI Bill of Rights Further information may be obtained from the National Gastroenterological Association, Dept. GSJ, 1819 Broadway, New York 23, N. Y.

AMERICAN CONGRESS OF PHYSICAL MEDICINE

The American Congress of Physical Medicine will hold its twenty-seventh annual scientific and clinical session at the Netherland Plaza Hotel, Cincinnati, September 6 through 10. Two instruction courses, each consisting of ten lectures, will be offered during the session. One course will be limited to physicians, while the other

(Continued on Page 650)

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The organization of the Minneapolis War Memorial Blood Bank is now complete and its services are available to the people and physicians of this area.

The bank is a non-profit, self-supporting organization sponsored by the Minneapolis Junior Chamber of Commerce under the supervision of the Hennepin County Medical Society.

G. Albin Matson, Ph.D., Director of the bank, has been active in blood banking, Rh work and research for many years. When the American Association of Blood Banks was organized, Dr. Matson was elected as its first President and is now regional member of its Board of Governors.

Dr. Matson, backed by selected personnel and excellent physical equipment, is now available to help physicians and hospitals in their studies of Rh problems, preparation of Rh hapten, management of difficult transfusions, selection of special bloods, preparation of blood products (washed red cells, red cell paste, special plasma), genetic and paternity studies, and any similar blood problems.

Dr. Matson and his staff will assist hospitals or communities in organizing blood banks. The blood banking facilities of the Upper Midwest area are to be integrated for each other's assistance in normal times and for protection in case of public disaster.

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AMERICAN CONGRESS OF PHYSICAL MEDICINE

(Continued from Page 648)

will be open to physicians as well as physical therapy technicians who are registered with the American Registry of Physical Therapy Technicians. Full information may be obtained from the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

RED RIVER VALLEY SOCIETY

A meeting of the Red River Valley Medical Society was held in Warren on April 29. The principal speaker at the meeting was Dr. Harold F. Buchstein, Minneapolis neurosurgeon, who discussed brain tumors. Following his talk, Dr. Buchstein conducted a question-and-answer session on the same subject.

SCOTT-CARVER COUNTY SOCIETY

The Scott-Carver County Medical Society held a meeting in Waconia on April 22. Guest speakers at the meeting were Dr. A. I. Braude, Minneapolis, and Dr. Henry H. Young, Rochester.

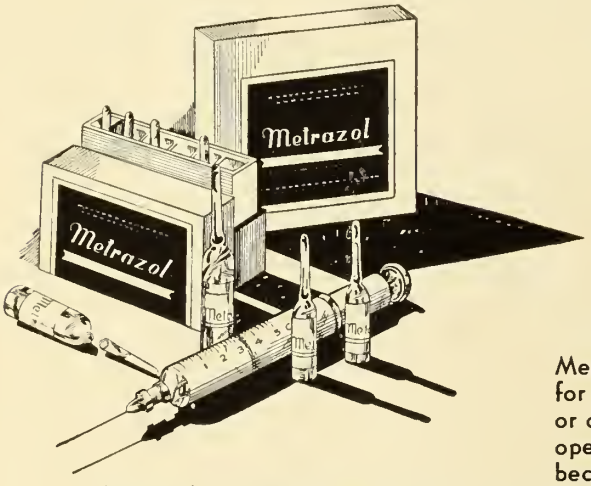
SAINT PAUL SOCIETY OF INTERNAL MEDICINE

The history of the Saint Paul Society of Internal Medicine, now two years old, which grew out of a small group of Saint Paul physicians, forms an interesting account.

In the years 1945 and 1946, eight or ten Saint Paul internists formed a Journal Club to meet following the St. Lukes Hospital staff meetings. This group included Drs. J. F. Borg, J. F. Briggs, David Craig, Harvey Beek, W. Hollingshead, Dwight Martin, and Ben Sommers. During their meetings, a Saint Paul Society of Internists was discussed and planned, and a very informal meeting to discuss the formation of such a society took place in August, 1947, at the home of Dr. Ben Sommers.

The first actual meeting of the society was held Monday evening, September 29, 1947, in the Century Room of the Lowry Hotel. This meeting like those to follow was a dinner meeting, and Dr. Harold Richardson stated in a few introductory remarks that the arrival in Saint Paul, since the war, of well-trained internists had swollen the ranks to approximately fifty men specializing in this field. This number seemed sufficient to make the formation of a society both feasible and desirable for both scientific and social reasons. It was decided that the society should be open to all men limiting their practice to internal medicine, irrespective of certification by the board. Two types of membership were formed: the active membership for those men who had been certified by the board or who had practiced the equivalent of five years of internal medicine, and associate membership for those who had not practiced the full five years. Dr. John Lepak was nominated temporary chairman and was elected president at a subsequent meeting. Twenty-six members were present at this meeting.

The Saint Paul Society of Internal Medicine holds two regular meetings a year, in October and April. The meetings take place in the Lowry Medical Arts Building in the Ramsey County Library. Formal papers are presented by members of the society or by guests. Discussion of papers presented is usually active.



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J.A.M.A. 137:789 (June 26) 1948.

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In Memoriam

FLORENCE A. RICHARDSON

Dr. Florence A. Richardson, for many years a practitioner in Minneapolis, died in Omaha, Nebraska, April 16, 1949.

Dr. Richardson was graduated from the University of Michigan medical school in 1895. She interned at Northwestern Hospital. She did not practice during her marriage to Dr. Oscar K. Richardson, but upon his death in 1909 resumed practice in Minneapolis.

Dr. Richardson was a member of the Alpha Epsilon Iota national medical sorority. She was a past president of the Women's Rotary Club, served as juvenile court physician and was on the health education staff of the YWCA.

Dr. Richardson is survived by a daughter, Mrs. Dorothy R. Wilbur, of Omaha.

OTTO FREDERICK SCHUSSLER

Dr. Otto F. Schussler, an orthopedic surgeon of Minneapolis, retired since 1930, died April 19, 1949.

Dr. Schussler was born at St. Cloud, Wisconsin, October 10, 1873. He attended Central High School in Minneapolis and obtained his medical degree from Hamline Medical School in 1905. His internship was served at Minneapolis City Hospital.

During the period of 1905 to 1920 he was a surgeon in contract practice in railroad construction and mining in the West. He spent a year in postgraduate study in Vienna and Berlin in 1912.

Dr. Schussler practiced orthopedic surgery in Minneapolis from 1920 to 1930 and was at one time vice president of the Fairview Hospital staff in Minneapolis. He was also a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations.

Dr. Schussler married Edith May LaMoreau. They had no children.

A few years ago the London *Spectator* offered a prize for the best philosophy of life which could be written on the back of a postcard. The entry that won the prize could almost have been written on the back of a postage stamp. There were just eight words in it: "Love, trust, dare, and go on doing it."





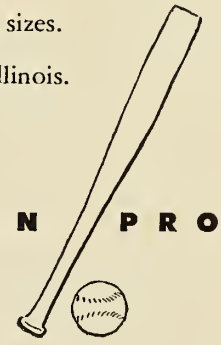
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Woman's Auxiliary

NEW PRESIDENT EXTENDS GREETING

Mrs. H. E. Bakkila

During the next year I ask for the loyal support and help of every member of the Woman's Auxiliary to the Minnesota State Medical Association, for the work of the Auxiliary depends entirely on the effort of every individual member. If we all work together, Minnesota will have another successful year.

The Auxiliary, while not changing in its objectives and policy, has seen within the past several years, more stress placed on public relations or in a National Educational campaign. It is our duty and privilege to assist the AMA and our own Minnesota State Medical Association in an effort to educate the American public as to the advantages of voluntary health insurance and the disadvantages of compulsory or political health insurance. Each of us, if we are well-informed, can, through our many contacts with other women's clubs throughout our own counties, assist the doctors in this campaign by serving on committees, securing speakers, arranging programs, and doing such work as may be approved by the Minnesota State Medical Association.

I appreciate the honor you have shown me by electing me to serve as your president and representative. At all times I shall endeavor to carry on the high ideals set forth in the Auxiliary pledge.

MRS. WAAS NEW PRESIDENT-ELECT

Mrs. Charles W. Waas, Saint Paul, is the new president-elect of the Woman's Auxiliary, slated to move up to the presidency at the next annual meeting. Other new officers are: Mrs. Joseph M. Neal, Minneapolis, first vice president; Mrs. C. L. Sheedy, Austin, second vice president; Mrs. F. P. Moersch, Rochester, third vice president; Mrs. L. A. Stelter, recording secretary; Mrs. John Dordal, Sacred Heart, treasurer; Mrs. O. M. Heiberg, Worthington, auditor.

Mrs. Bakkila announced the following appointments May 10: Mrs. Harry Klein, Duluth, corresponding secretary; Mrs. S. S. Hesselgrave, Center City, parliamentarian; Mrs. T. O. Young, Duluth, historian; Mrs. T. N. Fleming, St. Cloud, archives; Mrs. W. H. Von der Weyer, Saint Paul, bulletin; Mrs. Mark E. Ryan, Saint Paul, cancer; Mrs. S. N. Litman, Duluth, editor, Minnesota Medicine.

Mrs. Henry Quist, Minneapolis, finance; Mrs. J. A. Cosgriff, Olivia, *Hygeia;* Mrs. L. Raymond Scherer, Minneapolis, legislation; Mrs. Virgil Schwartz, Minneapolis, medical and surgical relief; Mrs. Charles W. Waas, Saint Paul, organization; Mrs. N. O. Pearce, Minneapolis, press and publicity; Mrs. A. Christiansen, Saint Paul, printing; Mrs. David Halpern, Brewster, program and health education.

Mrs. E. W. Miller, Anoka, public relations; Mrs. H. H. Fesler, Saint Paul, resolutions; Mrs. George Penn, Mankato, revisions; Mrs. Karl Wold, Saint Paul, Mrs. O. I. Sohlberg, St. Paul, Mrs. P. S. Rudie, Duluth, Mrs. F. R. Kotchevar, Eveleth, Mrs. A. F. Giesen, Starbuck, Mrs. L. P. Howell, Rochester, social; Mrs. Leonard Arling, Minneapolis, Newsletter; Mrs. Harold C. Benjamin, Minneapolis, roster; Mrs. Reuben Erickson, Minneapolis, Workshop.

Mrs. Anthony J. Bianco, Duluth, Mrs. E. V. Goltz, Saint Paul, Mrs. F. S. McKinney, Minneapolis, Mrs. J. A. Thabes, Brainerd, Mrs. Melvin Henderson, Rochester, advisory committee; Dr. F. J. Elias, Duluth, Dr. E. M. Hammes, Saint Paul, Dr. A. E. Cardle, Minneapolis, Dr. R. N. Barr, Minneapolis, R. R. Rosell, Saint Paul, medical advisory council.

The Board approved a special Committee on Health Days, after which Mrs. Bakkila appointed Mrs. H. F. Wahlquist, chairman.

AUXILIARY OUTLINES HEAVY SCHEDULE

Meeting in annual session at Saint Paul, May 9-11, the State Auxiliary lined up a heavy schedule of work for the coming year, voting to continue projects begun this year and initiating new activities to further implement their program.

Continued will be the extensive educational campaign supplementing medical association work on three levels —national, state and county. Members will distribute informational material, fill speaking engagements and work with other groups in attaining complete public understanding of the problem of adequate medical care. At the suggestion of Mrs. O. B. Fesenmaier, the organization voted to authorize county Auxiliary presidents, with the assistance of their medical advisers, to write to presidents of other women's organizations in each county, requesting that letters opposing compulsory health insurance be written to President Truman and Minnesota congressmen.

The public relations workshop, inaugurated last fall, will be held again this fall, and Auxiliary members will continue their highly successful schedule of Community Health Days in Minnesota.

Many members attended the splendid exhibit on Auxiliary Health Days. Action was also taken to continue the *Newsletter.*

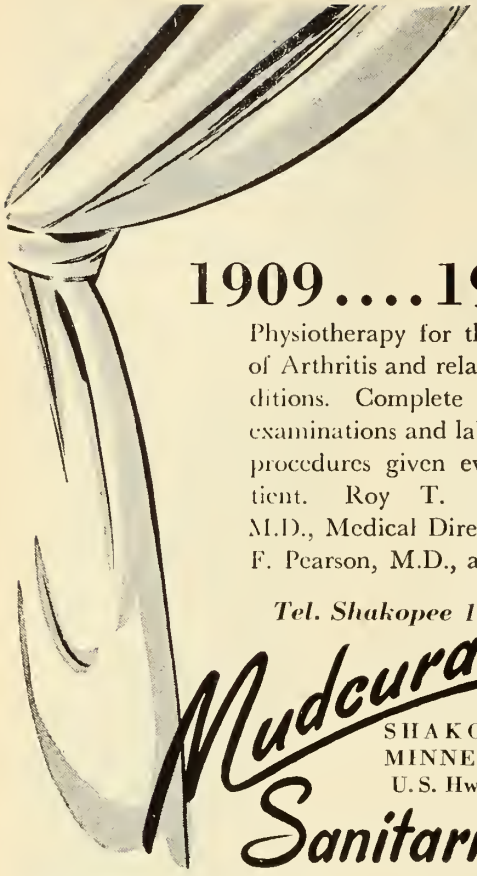
Mrs. Mark E. Ryan, speaking for the Cancer Committee, asked that a cancer chairman be appointed, whenever possible, in each county, thus further assisting the State organization's work in all fields of public health.

Growth of the Auxiliary itself was reported by Mrs. Bakkila, who listed three new county units and 539 new members, bringing the total membership to 2,048.

Mrs. S. S. Hesselgrave, who has served as a national officer, state president, parliamentarian and adviser, was made an honorary member, with all rights of membership and was presented with a gift in appreciation of her outstanding service.

(Continued on Page 656)


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Inert ingredients including n-Propyl Alcohol 69.9% 10.0%
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Zinc propionate 5.0%
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Propionic acid 2.7%
Sodium caprylate 10.0%
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$200,000.00 deposited with State of Nebraska for protection of our members.

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AUXILIARY OUTLINES HEAVY SCHEDULE

(Continued from Page 654)

During the memorial services for deceased members, conducted by Mrs. J. F. Norman, Crookston, special tribute was paid to Mrs. James Blake, Sr., of Hopkins, past national president, former county and state president, and Mrs. A. MacLaren, St. Paul, founder of the State Auxiliary.

Fourteen past presidents attended the meeting: Mrs. Hesselgrave, Mrs. Adolph Passer, Mrs. Martin Nordland, Mrs. F. J. Elias, Mrs. E. M. Hammes, Mrs. J. F. Norman, Mrs. W. B. Roberts, Mrs. A. C. Baker, Mrs. J. J. Ryan, Mrs. F. S. McKinney, Mrs. Anthony Bianco, Mrs. E. V. Goltz, Mrs. M. S. Henderson and Mrs. J. A. Thabes.

Reports were given by county auxiliary presidents: Blue Earth, Mrs. J .D. Sjoding; Blue Earth Valley, Mrs. E. E. Zemke; Hennepin, Mrs. Reuben Erickson; Mower, Mrs. L. G. Flanagan; Olmsted-Houston-Fillmore-Dodge, Mrs. B. M. Black; Park Region, Mrs. C. A. Boline; Ramsey, Mrs. H. H. Fesler; Red River Valley, Mrs. Orlo K. Behr; McLeod, Mrs. A. M. Jensen; Renville, Mrs. J. A. Cosgriff; St. Louis, Mrs. P. S. Rudie; Southwestern, Mrs. W. J. Benjamin; Stearns-Benton, Mrs. Julius Buscher; Clay-Becker, Mrs. C. W. Moberg; Upper Mississippi, Mrs. I. L. Mitby; Wabasha, Mrs. B. A. Flesche; Winona, Mrs. A. E. Meinert.

Reports of presidents not present were filed. Practically every organized auxiliary had representation at either the Board sessions or the annual meeting.

The constitution was revised, in part, so that the Board of Directors now includes regional advisers, in addition to officers, presidents of county Auxiliaries, delegates or alternates, chairmen of standing committees and past-presidents. Section six, Article V of the by-laws was revised to read:

"Members-at-large shall pay to the state treasurer one dollar initial fee and annual dues of one dollar payable January 1, plus the per capita fee due the Woman's Auxiliary to the American Medical Association."

Mrs. H. F. Wahlquist, 1948-49 president, was given an enthusiastic ovation as she turned over the duties of her office to Mrs. Bakkila.

Said Mrs. Wahlquist: "I know of no other group I should be more honored to serve. The happiness you have given me through your loyalty and co-operation is inexpressible."

Referring to the work the Auxiliary has done, under the sanction of the State Medical Association, Mrs. Wahlquist pointed out, "With this (Auxiliary) membership go opportunities of service and leadership. We all recognize clearly now that an organization which is not behind worthwhile projects is not worthy of existing—social entertainment is not enough today."

STATE LEGISLATURE PASSES HEALTH BILLS

Mrs. Elmer M. Rusten

In the 1949 session of the Minnesota Legislature 1,665 bills were introduced in the Senate and 1,839 bills in the House, of which a total of 724 bills became law.

(Continued on Page 658)

WHEN OBESITY IS A PROBLEM



Clinicians have long noted that the forward bulk of the heavy abdomen with its fat-laden wall moves the center of gravity forward. As the patient tries to balance the load, the lumbar and cervical curves of the spine are increased, the head is carried forward and the shoulders become rounded. Often there is associated visceroptosis. Camp Supports have a long history among clinicians for their efficacy in supporting the pendulous abdomen. The highly specialized designs and the unique Camp system of controlled adjustment help steady the pelvis and hold the viscera upward and backward. There is no constriction of the abdomen, and effective support is given to the spine. Physicians may rely on the Camp-trained fitter for precise execution of all instructions.

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STATE LEGISLATURE PASSES HEALTH BILLS

(Continued from Page 656)

Among the bills involving medicine to become law, the following seem particularly worthy of comment:

Multiple County Health Units Bill.—This was essentially the same bill which failed to pass two years ago. It makes permissible the establishment of multiple county health departments, with the use of federal funds allocated for this purpose, if and when they are made available.

Control of Incorrigible Tuberculosis Patients.—A great deal of confusion has existed up to the present time as to where responsibility resides in re-committing incorrigible tuberculous patients who leave, without authority, the sanatoria where they are undergoing treatment. This bill strengthens and clarifies present laws with respect to these undisciplined persons who can easily become public health menaces if they are not properly handled.

Pasteurization Bill.—No milk, cream, or fluid milk products may be sold unless pasteurized. (Casual sales on farms excepted). This bill was submitted primarily in the interest of better control of brucellosis. The morbidity rate from brucellosis has increased five times in the last ten years.

Cancer Statistical Research.—This legislation is designed to make cancer and tumor cases reportable to the State Health Department and to protect hospitals and physicians in their reporting of these cases.

Legislation to permit the use of unclaimed dogs in public pounds by the State University for research purposes. These animals have remained unclaimed in pounds for long periods and would otherwise be destroyed.

Legislation to expand the State Mental Health Program and provide an increased appropriation for that purpose. This legislation outlined principles and goals and dealt with the educational and preventive aspects of a strong mental health program for the State. It provided for a Commissioner of Health to direct the state program to be appointed by the head of the Department of Public Institutions, selected as the State Agency through which any state, federal or other funds are to be allocated. The Minnesota State Medical Association tried to amend the bill to stipulate that the preventive aspects should reside with the Minnesota Department of Health under the direction of its trained professional staff. It is hoped that the actual administration of the program will be so handled.

Control of the BB or Air gun was affected when the Minnesota legislature enacted into law legislation which classifies this weapon as a "firearm" and subjects the BB gun to the same controls as any gun, pistol, revolver or other firearm. Sight-saving groups were particularly interested and active in the passage of this measure.



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Of General Interest

"Let's Talk About Health," the weekly quarter-hour radio program presented by Dr. Robert N. Barr of the Minnesota Department of Health, is now heard at a new time—7:00 p.m. on Mondays—over Station KUOM. During July, representatives of four divisions of the health department will give the following talks on this program: July 4—How to Enjoy a Holiday. July 11—The Story of Askov. July 18—Eating Without Regrets. July 25—Safety on the Farm.

* * *

Dr. Ralph J. Eckman Duluth, was the principal speaker at the annual ladies' night meeting of the Brotherhood of Lakeside Bethany Lutheran Church in Duluth, on May 10. Dr. Eckman spoke on "Socialized Medicine."

* * *

The Northwestern Clinic in Crookston acquired a new radiologist in April when Dr. George S. Boyer became a member of the staff. A graduate of the University of Oregon Medical School in 1938, Dr. Boyer served in the air forces from 1939 to 1946. For the past three years he has studied radiology at the University of Minnesota Hospitals.

* * *

Dr. Ernest Gellhorn, professor of neurophysiology at the University of Minnesota, has been invited to address the Royal Society of Medicine in London on September 13. The subject of Dr. Gelhorn's talk will be "The Physiological Basis of Shock Therapy of Mental Diseases."

* * *

Following the completion of the north section of a new medical clinic building in Northfield, Dr. Stanley T. Kucera opened his offices in the building on May 2. Dr. Warren E. Wilson and Dr. Bernard Street planned to move their offices into the new building as soon as the other wing of the structure could be completed.

* * *

Dr. Eugene L. Bauer has opened an office in the Lowry Medical Arts Building, Saint Paul, where he will specialize in otolaryngology. Dr. Bauer recently completed a fellowship in the Mayo Foundation in Rochester.

* * *

At the annual banquet of the University of Minnesota chapter of Nu Sigma Nu medical fraternity, held at the Minnesota Club, Saint Paul, on April 20, the principal speaker was Dr. Stuart Graves, dean emeritus of the University of Alabama School of Medicine. Dr. Graves was introduced at the banquet by Dr. Charles N. Hensel, Saint Paul, president of the board of governors of the Twin Cities Alumni Association of the chapter.

* * *

It was announced late in April that the practice of Dr. J. C. Klein in Shakopee had been acquired by Dr. Lawrence H. Heinz and his wife, Dr. Ivy B. Heinz, of Wabasso The husband-wife medical team planned to arrive in Shakopee about June 1 to take over the practice. Dr. Klein, a graduate of Marquette University, who has practiced in Shakopee since 1936, planned to spend the summer in northern Minnesota.

* * *

"Emotional Problems of Children," was the title of a talk presented by Dr. Edward D. Anderson, Minneapolis, at a meeting of the Lake Harriet Parent-Teachers Association in Minneapolis on May 10.

* * *

Dr. John J. Bittner, professor of cancer research and director of cancer biology at the University of Minnesota, was invited by the Vatican Academy of Science to participate in an international cancer conference in Rome in early June. Unable to make the trip to Rome, Dr. Bittner prepared a paper on "Etiology (Theory of Causation) of Mammary Cancer in Mice," which was read at the conference by Pietro Rondoni, professor of general and experimental pathology at the University of Milan, Italy.

* * *

At a meeting of the Mora Civic Club on April 22, Dr. Willard F. Nordman, as guest speaker, advocated the hiring of a county nurse, a move being considered in Kanabec County at the time. Dr. Nordman pointed out the value of having a county nurse, especially as an aid in the control of tuberculosis in the county.

* * *

Speaking at a meeting of the Monroe Parent-Teachers Association in Duluth on April 21, Dr. Karl E. Johnson, Duluth, said that the effects of compulsory health insurance would be similar to the abuses of "sick call" in the armed forces. Pointing out that the government health plan would promote complaints of insignificant ailments, the ex-navy physician said, "If the same proportion of civilians came in for medical attention as reported for sick call in our unit, we would have about 3,600 persons a day crowding our offices in Duluth under a system of compulsory health insurance."

* * *

Among physicians attending a six-day continuation course in proctology at the University of Minnesota, April 11 through 16, were Dr. Frederick W. Behmler, Morris; Dr. C. H. Holmstrom, Warren; Dr. Paul F. Meyer, Faribault, and Dr. Troy G. Rollins, Elmore. In addition to lectures at the Center for Continuation Study, clinics were held at Minneapolis General Hospital and the Veterans Hospital.

* * *

Dr. Nora M. C. Winther, Minneapolis, left for England on May 12 to attend an obstetrics and gynecology conference in London.

* * *

It was announced in April that Dr. H. K. Helseth of Fergus Falls had moved to Mott, North Dakota, where he intended to go into private practice.

According to an announcement on May 3, grants of $293,452 to support laboratory and clinical research and $79,853 for research facilities were recently made by the National Cancer Institute. The grants were approved by Surgeon General Leonard A. Scheele of the Public Health Service following recommendation by the National Advisory Cancer Council.

* * *

Two Rochester physicians were on the program at a meeting of the Southwestern Minnesota Medical Society in Worthington on April 25. Dr. David C. Dahlin spoke on "Carcinoma of the Uterus," and Dr. Charles F. Stroebel presented a paper on "Recent Advances in Hematology."

* * *

In April, Dr. Lester N. Dale, Red Lake Falls, announced that Dr. James Reinhardt would become associated with him in the Red Lake Falls Clinic early in July. Dr. Reinhardt, formerly of Detroit Lakes, is a graduate of Temple University. He served his internship at Northwestern Hospital, Minneapolis.

* * *

At a meeting of the Iowa State Medical Society in Des Moines on April 21, Dr. Arthur M. Olsen spoke on "Differential Diagnosis of the More Common Pulmonary Conditions."

* * *

Two Duluth organizations recently heard talks on government medicine by Dr. Arnold O. Swenson, Duluth. Speaking at a meeting of the Duluth Optimist Club on April 22, Dr. Swenson urged club members to oppose national compulsory health insurance. On May 6, at a meeting of the West Duluth Women's Club, Dr. Swenson spoke on "Socialized Medicine in Europe."

* * *

It is better to live well than long, Dr. Thurman B. Rice, head of the department of public health at Indiana University, told an audience at the Ramsey County Health Day in Saint Paul on April 21.

Saying that the important thing about living is to have fun, Dr. Rice stated that the average limit of human life will probably be the Biblical three-score-and-ten years and that it is better to enjoy a short life than endure a long one. Death for old people, he said, as a rule, is a relief, not a curse. He suggested that the way to grow old gracefully is to enjoy life as it comes, to realize it is right that changes in life come when they do.

* * *

Dr. Marjorie M. Pyle, of Mineral Springs Sanatorium at Cannon Falls, was one of six persons in the nation to receive a tuberculohis research fellowship, it was announced by the American Trudeau Society at a meeting in Detroit on May 1. The award was presented at the society convention, which was attended by 2,000 physicians' nurses and health workers from all parts of the country.

* * *

Announcement was made on April 17 that Dr. Jack E. Geist, Saint Paul, had been commissioned a first lieutenant in the regular army medical corps.



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Members of the Rice County Medical Society, meeting in Faribult on April 27, heard Dr. M. W. Anderson, Rochester, speak on "Treatment of Coronary Heart Disease." On May 4, Dr. Anderson spoke on the same subject at a meeting of the Lyon-Lincoln County Medical Society in Marshall.

* * *

On May 2, Dr. G. Albin Matson, formerly of Salt Lake City, became director of the Minneapolis War Memorial Blood Bank. Dr. Matson, former president of the American Association of Blood Banks, has published eighteen papers on his investigative work concerning the blood Rh factor. In Salt Lake City he was director of the city's centralized blood banking system. The Minneapolis War Memorial Blood Bank was set up by the Junior Chamber of Commerce with the encouragement and assistance of the Hennepin County Medical Society.

* * *

A feature of the Faribault Lions Club meeting on April 21 was the presentation by Dr. James J. Kolars of a wire-recorded address on "Socialized Medicine" by the president of the AMA.

* * *

At a meeting in April, two Minneapolis physicians were honored by Fairview Hospital authorities for more than thirty-three years of service as members of the hospital staff. The hospital board presented honorary scrolls to Dr. Henry Lysne and Dr. Ivar Sivertsen, commending them for their years of "cheerful service, superior leadership, high standards and unselfish loyalty."

* * *

A Rochester physician, Dr. Russell Wilder, is one of the first two men to receive the Howard Taylor Ricketts award for outstanding medical work. The award was presented at the University of Chicago on May 23. The other recipient of the award was Dr. Ludvig Hektoen, who was the first chairman of the University of Chicago's pathology department.

The award was established by the wife of the late Dr. Ricketts, who died of typhus fever while investigating the disease in Mexico City. Dr. Ricketts identified the causative organisms of Rocky Mountain spotted fever and typhus fever.

Dr. Wilder worked with Dr. Ricketts in Mexico City and, after the death of Dr. Ricketts, remained to complete the typhus investigation.

* * *

One of the speakers at the annual convention of the Minnesota Society of Medical Technologists in Minneapolis on May 28 was Dr. George Moore, instructor in surgery at the University of Minnesota.

* * *

After a discussion of socialized medicine by three Hibbing physicians, the Hibbing Chamber of Commerce went on record on April 19 as opposing the government health plan and sent telegrams to congressmen to that

effect. The disadvantages of the government plan were discribed to the group by Dr. Bertram S. Adams, Dr. Francis W. Bachnik and Andrew Sinamark, all of Hibbing.

* * *

Hard-boiled treatment of the tuberculous person who, knowing he has the disease, exposes others, was recommended by Dr. Helen A. Dickie, of the University of Wisconsin School of Medicine, at the twenty-ninth annual meeting of the Tuberculosis and Health Association of St. Louis County in Duluth on April 19.

Such a person "is as much a homicidal criminal as the person who causes death violently," Dr. Dickie stated. "Kid-glove handling of problem cases is outdated. The public attitude toward such cases should not be just firm. It should be hardboiled," she told the association members.

Among the officers of the St. Louis County Tuberculosis and Health Association are Dr. G. A. Hedberg, Nopeming, first vice president; Dr. Robert P. Pearsall, Virginia, second vice president, and Dr. Mario Fischer, Duluth, treasurer.

* * *

At a meeting of the Lyon-Lincoln County Medical Society in Marshall on May 4, Dr. L. O. Underdahl, Rochester, presented a paper on "Present-day Treatment for Hyperthyroidism."

* * *

The regular spring chest clinic in Stillwater was conducted on April 25 by Dr. Karl H. Pfuetze, medical director of Mineral Springs Sanatorium at Cannon Falls.

* * *

Dr. R. F. Mears, Northfield, was elected chairman of the regional medical committee for the Saint Paul Red Cross Blood Center at a meeting in Saint Paul on May 10. As an advisory group, the committee will help direct the program in the 150-mile area covered by the blood-mobile which operates out of Sanit Paul. Other regional officers of the committee are Dr. A. G. Liedloff, Mankato, vice chairman, and Dr. E. V. Goltz, Saint Paul, secretary.

* * *

In Fairmont, Dr. E. A. Thayer has moved his offices into the former Bailey Hospital building, which he recently acquired. The building has not been used as a hospital for many years, but until recently it housed the offices of Dr. Robert Bailey, son of the founder, and Dr. Carl W. Krause. Dr. Bailey is no longer located in Fairmont, and Dr. Krause has transferred his offices to another building which he recently purchased.

* * *

Dr. D. R. Gillespie, Saint Paul, has been named chairman of the Saint Paul Area Public Health Council, a group composed of representatives of fifty-two private and public health organizations. One of the vice chairmen of the council is Dr. Robert B. J. Schoch, Saint Paul.



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DEALERS IN DEPENDABLE MERCHANDISE

A continuation course in medicine for general practitioners was held May 12 through 14 at the University of Minnesota Center for Continuation Study. The general theme of the course was the study of blood and blood diseases and allergies. Among the guest speakers was Dr. Bruce K. Wiseman, chairman of the Ohio State University department of medicine.

* * *

Superintendents of the state's ten mental hospitals met with state officials in Saint Paul on May 2 to plan the start of Minnesota's $28,000,000 mental health program. The hospital heads conferred with Carl Jackson, state director of public institutions, and with Governor Luther Youngdahl to consider methods for improving the care of the state's 15,000 patients.

Among the superintendents who attended the conference were Dr. Stanley B. Lindley, Willmar; Dr. W. L. Patterson, Fergus Falls; Dr. E. J Enberg, Faribault; Dr. M. C. Peterson, Rochester; Dr. Burton P. Grimes, St. Peter; Dr. Henry Hutchinson, Moose Lake; Dr. R. J. Gully, Cambridge, and Dr. Ralph Rosen, Hastings.

* * *

The Otter Tail-Wilkin County Council of the American Legion, at a meeting in Henning on April 13, adopted a resolution that Minnesota members of congress be urged to push for a higher wage scale for medical employes of Veterans Administration hospitals and authorize the administration to meet outside competition in hiring physicians.

Dr. Louis E. Prickman, Rochester, was elected president of the Central Clinical Research Club at a meeting of the organization in St. Louis late in April.

* * *

A discussion on the topic, "Would We Benefit from a Compulsory Health Plan?" was held in the Hallie Q. Brown House, Saint Paul, on April 24. Speaking in favor of the plan were John C. Kidneigh, associate director of the University of Minnesota School of Social Work, and Dr. Max Seham, Minneapolis. Opposing the compulsory health plan were Dr. Herbert F. R. Plass, Minneapolis, and Dr. Charles E. Rea, Saint Paul.

* * *

The University of Minnesota was recently granted $2,940 by the American Heart Association to support the research of Dr. Roger M. Reinecke, assistant professor of physiology, who is studying the function of potassium in blood plasma in relation to contraction of the heart muscles.

* * *

In Austin it was announced in April that a committee had been appointed to study the feasibility of forming a county-city public health organization. The committee planned to meet with Dr. Paul C. Leck, Austin physician, who had previously worked on a preliminary survey of community health.

* * *

A former Saint Paul resident, Dr. Dean Clark, was recently named director of the Massachusetts General Hospital in Boston.

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At a meeting of the International Falls Rotary Club on April 20, Dr. Edward B. Kinports discussed the history of the army medical corps and the scientific improvements that have enlarged the scope of its service during hostilities.

* * *

It was announced in April that Dr. Kirk Douglas, formerly of Tacoma, Washington, had joined the staff of the St. Peter Clinic and was associated in practice with Dr. E. G. Olmanson. A graduate of the University of Minnesota Medical School in 1939, Dr. Douglas served his apprenticeship at Tacoma General Hospital and later entered private practice in Tacoma.

* * *

A debate on compulsory health insurance was held in Rochester on May 2 under the sponsorship of the Association of Fellows of the Mayo Foundation. Engaging in the debate were Dr. J. W. Beeler, Dr. J. W. Faulkner, Dr. R. D. Miller, and Dr. E. E. Harnagel. Dr. James D. Rogers acted as moderator.

* * *

It was announced late in April that Dr. Allen G. Janecky of Warroad would soon become associated in practice with Dr. A. A. Brink and Dr. Leonard Prochaska in Baudette. The three physicians plan to construct a modern clinic building in Baudette to house their offices.

* * *

An outpatient mental hygiene service for children is expected to be available in Minneapolis by late summer. Known as the Washburn Memorial Clinic, the mental hygiene unit will occupy the first floor of the Martin wing of St. Barnabas Hospital.

The clinic is being established by the trustees of the Cadwallader C. Washburn estate, and the professional staff will be supervised by Dr. Donald W. Hastings, head of the department of psychiatry at the University of Minnesota. The plan to create the clinic is strongly supported by public and private agencies devoted to social work.

* * *

Dr. Robert S. Clark, recently discharged from the navy, has announced his association in practice with the Richards Clinic in St. Cloud. A graduate of the University of Minnesota Medical School, Dr. Clark served his internship at Ancker Hospital, Saint Paul. In St. Cloud he will be associated as a general practitioner with Dr. W. B. Richards and Dr. F. L. Vrtiska.

* * *

Dr. Olaf I. Sohlberg, Saint Paul, has been re-elected president of the Minnesota Medical Service. Other officers of the organization are Dr. Richard R. Cramer, Minneapolis, vice president; Dr. C. A. McKinlay, Minneapolis, secretary, and Dr. W. A. Coventry, Duluth, treasurer.

* * *

During May, approximately 4,000 Minneapolis high school seniors received tuberculin skin tests and chest x-rays. The free tests were part of a tuberculosis prevention program sponsored by the Hennepin County Tuberculosis Association.

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Surgery of Colon and Rectum, One Week, starting June 13, September 12,
Esophageal Surgery, One Week, starting October 10.
Thoracic Surgery, One Week, starting June 20.
Breast and Thyroid Surgery, One Week, starting June 27.
Fractures and Traumatic Surgery, Two Weeks, starting June 13.
GYNECOLOGY—Intensive Course, Two Weeks, starting June 20, September 26.
Vaginal Approach to Pelvic Surgery, One Week, starting June 13, September 19.
OBSTETRICS—Intensive Course, Two Weeks, starting September 12.
MEDICINE—Intensive General Course, Two Weeks, starting June 13.
Gastroenterology, Two Weeks, starting June 27.
Gastroscopy, Two Weeks, starting June 13, July 18.
Electrocardiography and Heart Disease, Two Weeks, starting July 18.
PEDIATRICS—Diagnosis and Treatment of Congenital Malformations of the Heart, Two Weeks, starting June 13.
Personal Course in Cerebral Palsy, Two Weeks, starting August 1.
DERMATOLOGY—Formal Course, Two Weeks, starting June 13. Informal Clinical Course every two weeks.
UROLOGY—Intensive Course, Two Weeks, starting September 26. Ten Day Practical Course in Cystoscopy every two weeks.

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Dr. William B. Gallagher began practice in Waseca in April, taking the place of his father, Dr. B. J. Gallagher, who was confined as a patient in a Rochester hospital. A graduate of the University of Minnesota Medical School, Dr. William Gallagher served his internship at Milwaukee County Hospital, Milwaukee.

* * *

An effort to persuade thirty interns in Twin Cities hospitals to enter the state hospital system was made at a dinner meeting in Hastings on May 13.

The advantages of serving in state mental hospitals were pointed out to the interns by Governor Luther Youngdahl, Dr. F. J. Braceland, head of psychiatry at the Mayo Clinic, and his associate Dr. Howard Rome. Governor Youngdahl said that Minnesota can now pay "fairly decent financial remuneration." "In addition," he said, "we have a lot of fine men in the state hospital system, and we intend to get others who represent the best in the country."

Dr. Braceland stated that although epidemics are now fairly well controlled, "there is going to be an increase in nervous diseases because of the kind of world we live in. . . . But no matter what branch of medicine you choose to follow, you'll find it here in the state hospital."

Reminding the interns that emotional problems are a component of illness in a large percentage of patients, Dr. Rome said, "The frontiers of medicine lie in psychiatry. The fields of research and psychiatry are limitless."

A talk on socialized medicine was given by Dr. W. B. Richards, St. Cloud, at a joint meeting of the Women's Society of World Service and the Brotherhood of the Evangelical United Brethren Church in St. Cloud on May 12.

* * *

On March 26, Governor Luther Youngdahl signed a bill providing that unclaimed pound animals, which would otherwise be destroyed, be made available to biological institutions within the state. Minnesota thus became the first state to provide for statewide assistance in the procurement of animals for medical, dental and veterinary studies. About twenty municipalities had previously taken similar action.

The action of the Minnesota State Legislature is in contrast to the experience in Massachusetts, Pennsylvania and Illinois, where the opposition of the anti-vivisectionists is aided by the Hearst newspapers. The Minnesota law provides for licensing research institutions by the State Livestock Sanitary Board, which reserves the right to inspect or investigate at any time any institution that has applied for or received a license.

* * *

In 1933 the maternal death rate of 6.2 per 1000 live births placed our country in eleventh place among the leading countries of the world. In 1947 the rate had dropped to 1.3, which probably was not surpassed by any other country. None of the states had a rate above 2.6. Connecticut, Delaware, Iowa, Massachusetts, Minnesota, Oregon, Rhode Island, Utah and Wyoming re-

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ported rates less than 1.0, with Minnesota the lowest at 0.6. For whites, the rate declined from 5.6 to 1.1, and for nonwhites, from 9.7 to 3.3, during this period.

* * *

The Hebrew University—Hadassah Medical School, the first medical school to be established in the new state of Israel, opened its doors on May 17 as a joint undertaking of the Hebrew University and Hadassah, the Women's Zionist Organization of America. Until security conditions permit continuation of construction on Mt. Scopus, the school will be housed in four hospital units in Jerusalem. A campaign sponsored by Hadassah and the American Friends of the Hebrew University is presently engaged in raising the $5,500,000 needed to complete the school. Almost $4,000,000 has already been raised.

* * *

Dr. William F. Maertz, after practicing at New Prague since 1919, moved to Saint Paul in September, 1944, and temporarily occupied the office of Dr. C. L. Cain at 474 South Hamline. Upon Dr. Cain's return from service, Dr. Maertz opened an office at 658 Grand Avenue, where he is now practicing.

* * *

Among physicians attending a continuation course in medicine for general practitioners, held at the University of Minnesota May 12 through 14, was Dr. Joseph F. Schaefer, Owatonna.

* * *

"A Doctor's Viewpoint on Socialized Medicine" was the title of a talk presented by Dr. Karl E. Johnson, Duluth, at a meeting of the West End Business and Civic Club in Duluth on May 17.

* * *

On May 18, Governor Luther Youngdahl appointed Dr. H. W. Woltman, Rochester, Dr. E. M. Hammes, Saint Paul, and Dr. H. S. Diehl, University of Minnesota, to an advisory board to help choose a state commissioner of mental health.

* * *

In honor of fifty years of medical service, most of them spent in Glenwood, tribute was paid to Dr. J. R. Elsey at a dinner in Glenwood during the middle of May. The Glenwood Community Hospital staff and friends presented Dr. Elsey with a recording machine

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in appreciation of his years of service to residents of the area. Dr. Elsey has practiced in Glenwood since 1904.

* * *

Included as lecturers at a short course in dermatology at the University of Minnesota's Center for Continuation Study on May 16 and 17 were Dr. Paul A. O'Leary and Dr. Hamilton Montgomery, Rochester, who spoke on the diagnosis and management of skin disorders.

* * *

Dr. L. F. Richdorf and Dr. R. W. Gibbs, associates in the practice of pediatrics with offices formerly in the Medical Arts Building, Minneapolis, announce their removal to offices in the Loring Medical Building, 1409 Willow Street, Minneapolis.

* * *

Dr. Zondal R. Miller opened an office May 1, 1949, at 1065 Lowry Medical Arts Building, Saint Paul, for the practice of neurology and psychiatry. Dr. Miller graduated from the University of Minnesota Medical School in 1943, interned at the Navy Hospital, Long Beach, California, and served as a lieutenant (jg), in the Pacific area until December, 1945. He recently completed a residency in neurology and psychiatry at the University and Veterans Hospitals, Minneapolis.

* * *

Dr. Harry L. Plotke opened an office April 1, 1949, at 1058 Lowry Medical Arts Building, for the practice of ophthalmology. A graduate of the University of Minnesota Medical School in 1937, Dr. Plotke interned at Ancker Hospital, Saint Paul, practiced general medicine at Little Falls, Minnesota, and served with the army from March, 1941 to January, 1946, having been a major on his discharge. He recently completed a residency in ophthalmology at the Veterans Hospital, Minneapolis.

* * *

HOSPITAL NEWS

Seven new members have been admitted to the medical staff of Glenwood Hills Hospitals, Minneapolis, it was announced on May 10. The new members are Dr. Eric Kent Clarke, Dr. George M. Cowan, Dr. Stanley G. Law, Dr. Zondal R. Miller, Dr. Leonard A. Titrud, Dr. David S. Thorsen, and Dr. Martin Sukov. Their appointment brings the hospitals' medical staff to nineteen members.

* * *

BLUE SHIELD NEWS

To date this year, Blue Shield had made payment on 6,734 medical claims in the total amount of $264,321.42. Payment was made for 1,857 cases during April amounting to $73,204.85. Medical payments for April totaled $18,600.50; surgical payments for April totaled $49,878.85, and obstetrical payments for April totaled $4,725.50. Approximately 100 claims for Blue Shield benefits are originated daily, the average weekly payment on such claims amounting to about $17,000,000. At the end of April, approximately 180,000 people in Minnesota were eligible for Blue Shield benefits.

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pendent on the doctor and his office personnel as it is on the employes of Minnesota Medical Service, Inc. With this thought in mind, a series of luncheon meetings is being held to which doctors, nurses, secretaries, technicians, and other office personnel are invited. The benefits of the Blue Shield contract are reviewed and discussed, and the actual processing of medical claims is outlined. The most direct contact with the Blue Shield subscriber is through the doctor's office personnel; therefore, it is believed these meetings are of inestimable value to all concerned. Each doctor's office will be contacted relative to these meetings, and it is urged that every effort be made to have at least one representative of each office attend.

The Blue Shield office wishes to acknowledge the courtesy and interest shown its exhibit during the annual meeting of Minnesota State Medical Association. It was particularly gratifying to have an opportunity to meet personally many of the doctors with whom Blue Shield business is transacted.

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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

MEDICINE THROUGHOUT ANTIQUITY. Benjamin Lee Gordon, M.D. Member American Association of the History of Medicine and American Academy of Ophthalmology and Otolaryngology. Attending Ophthalmologist to Shore Memorial Hospital, Somers Point, New Jersey, and to Atlantic County Hospital for Tuberculous Diseases and Atlantic County Hospital for Mental Diseases, Northfield, New Jersey. Authorized Medical Examiner for Civil Aeronautics Administration, Department of Commerce, Washington, D. C. Author of "The Romance of Medicine." 818 pages. Illus. Price $6.00, cloth. Philadelphia: F. A. Davis Co., 1949.

HANDBOOK OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY. For Students and Practitioners of Medicine. Fourth Edition. Forrest Ramon Davison, B.A., M.Sc., Ph.D., M.B. Consultant and Toxicologist, Minneapolis, Minnesota. Formerly Assistant Professor of Pharmacology in the School of Medicine, University of Arkansas, Little Rock; Medical Department, Upjohn Company, Kalamazoo, Michigan; Assistant Professor of Pharmacology, University of Tennessee Medical School; Toxicologist to University Clinics, Memphis, Tennessee. 730 pages. Illus. Price $8.50, cloth. St. Louis: C. V. Mosby Co., 1949.

* * *

PREOPERATIVE AND POSTOPERATIVE CARE OF SURGICAL PATIENTS. Hugh C. Ilgenfritz, A.B., M.D., F.A.C.S. 898 pages. Illus. St. Louis: C. V. Mosby Co., 1948.

This comprehensive book discusses preoperative and postoperative care with a somewhat different viewpoint than the average. There are extensive chapters on fluid and electrolyte balance, metabolism and nutrition, as well as the general preoperative, sedative and postoperative measures.

Shock, transfusions and systemic complications are treated separately and very thoroughly. The use of chemotherapy and antibiotic drugs are very fully discussed and are up to date in all its phases. The various systems are treated separately in regard to surgery except for urologic surgery. The only references to the urinary tract are in regard to complications of other diseases, and the reasons for its omission are not indicated in the book. This is a field in which many general surgeons are interested, and as it is assumed that this book is intended for that group of surgeons; its omission would appear ill advised.

The Appendix lists various aids to diagnosis in regard to x-ray, and illustrates various methods of intravenous infusion and oxygen therapy.

On the whole, this book is an excellent review of the subject with the exception noted of the omission of urinary tract surgical care.

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OPERATIVE SURGERY. By Frederick C. Hill, B.A., M.S. (Surg.), M.D., Associate Professor of Surgery, The Creighton University School of Medicine, Omaha, Nebraska. Foreword by Charles W. Mayo, B.A., M.S. (Surg.), M.D., Section on Surgery, Mayo Clinic, Rochester, Minnesota. Illus. 698 pages. $12.75. New York: Oxford University Press, 1949.

This book is designed primarily for the intern, resident and less experienced surgeon, and except for brief notes on preoperative and postoperative care and the lesions involving various organs, it deals purely with surgical technique. Diagnosis and indications are only lightly touched upon. The author, who is associate professor of surgery at Creighton University and received his formal training at the Mayo Clinic, claims no originality of material.

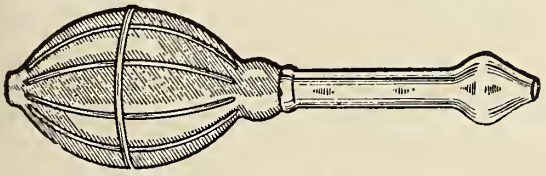
The first chapters are concerned with general principles, the handling of instruments, sutures and knot tying. Popular methods of suturing are illustrated. Subsequent chapters include descriptions of the more common operations performed in general surgery, gynecology and genito-urinary surgery. As a rule, one operation is described in detail for each surgical condition mentioned, preceded by a brief description of the gross pathologic condition concerned. These are standard procedures reflecting the author's preference and training.

The text is clear and concise, and the illustrations are well done but limited in number and detail. The sections on thyroid, breast, gastrointestinal tract and uterus are given special attention, and numerous drawings supplement these chapters. Otherwise only two or three figures appear with each operation.

This volume can be recommended to those entering the field of general surgery as an authoritative work on accepted surgical techniques. Nothing is included which does not have practical application and has not withstood the test of time.

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WANTED—Assistant in general practice, Southeastern Minnesota town, with general hospital. $400.00 a month plus car for business purposes. Address E-138, care MINNESOTA MEDICINE.

WANTED—Young M.D. interested in a permanent association. Location in Lake Minnetonka area, 25 minutes from downtown Minneapolis. Apartment is available. If interested, write full particulars concerning self. Address E-151 care MINNESOTA MEDICINE.

WANTED—Hospital Superintendent, X-Ray and Laboratory Technician, Nurses, for a new 20-bed community hospital to be opened in August, 1949. Write Greenbush Community Hospital Association, Greenbush, Minnesota.

LOCATION WANTED—Surgeon, 36, three years' approved training, desires location. Group association preferred. For details, write E-152, care MINNESOTA MEDICINE.

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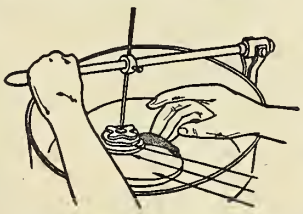
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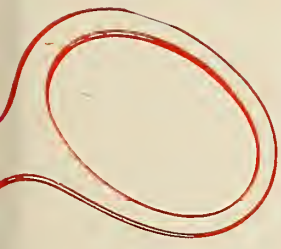


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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 32 **July, 1949** **No. 7**

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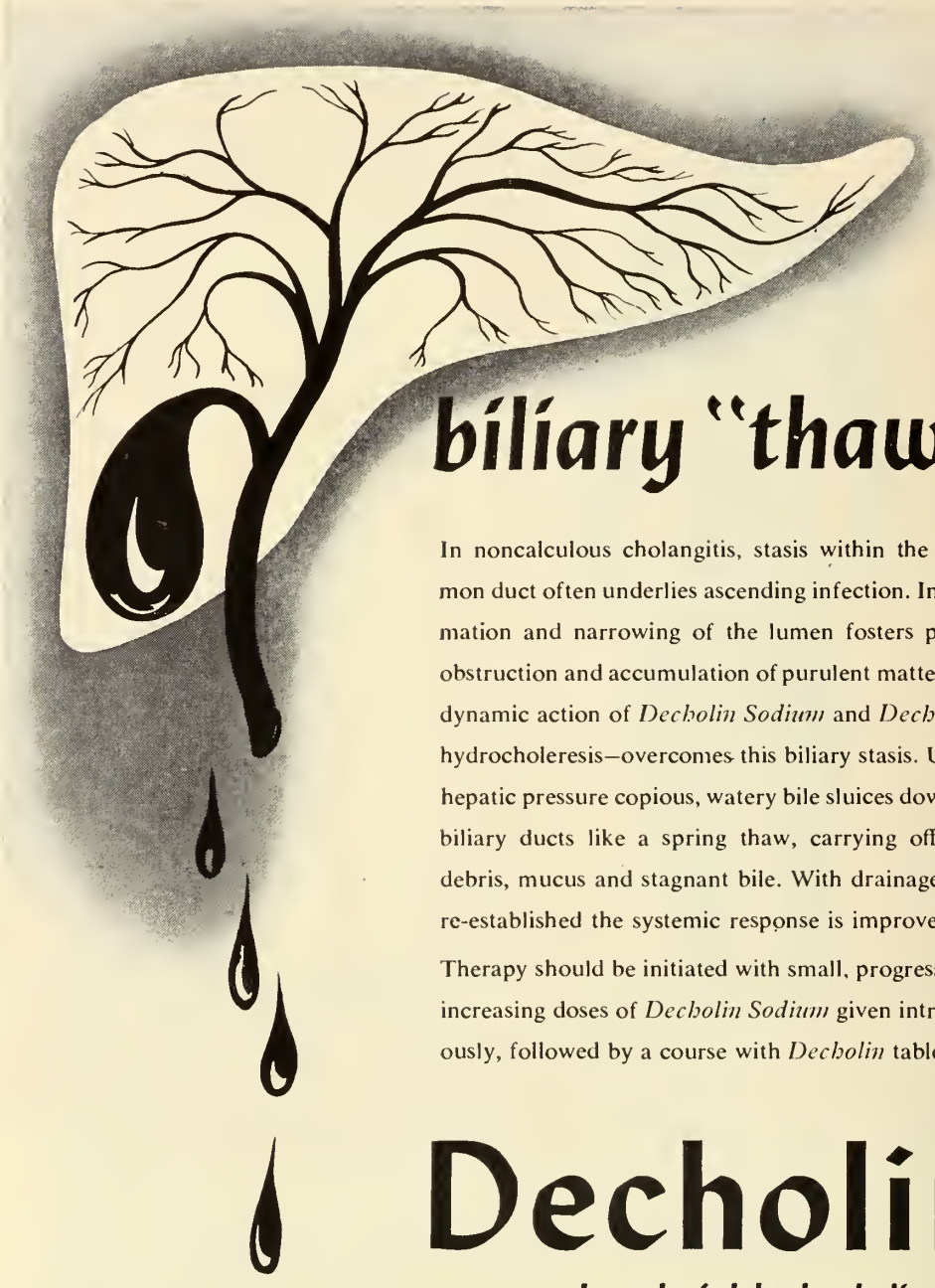
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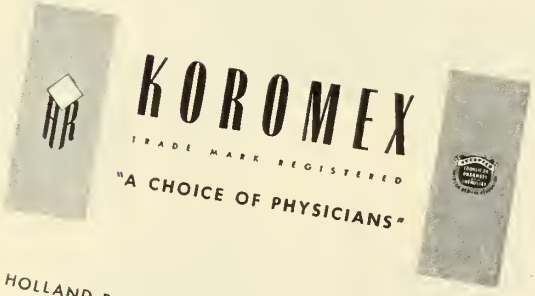
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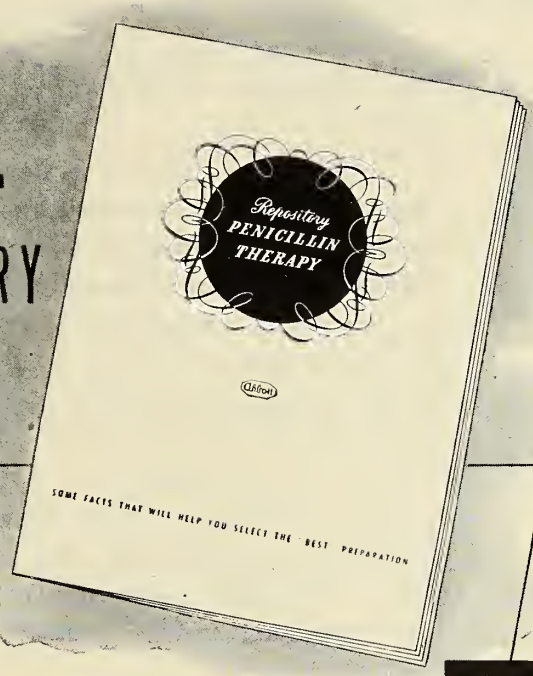


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*McLester, J. S.: Protein Comes Into Its Own, J.A.M.A. *139*:897 (April 2) 1949.

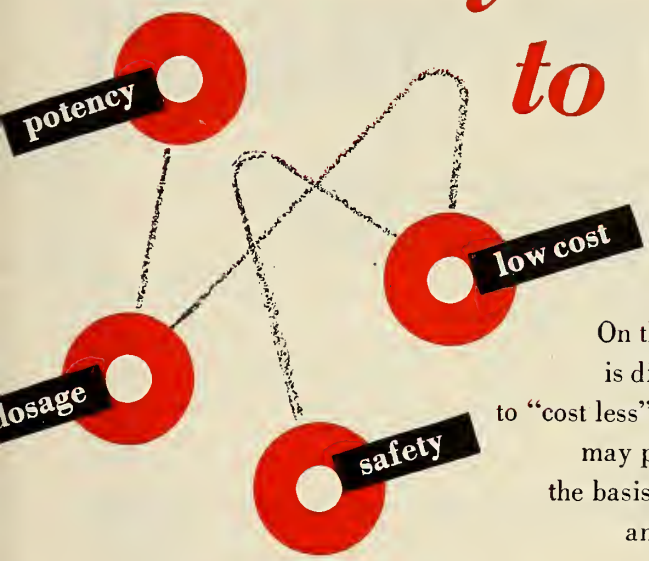
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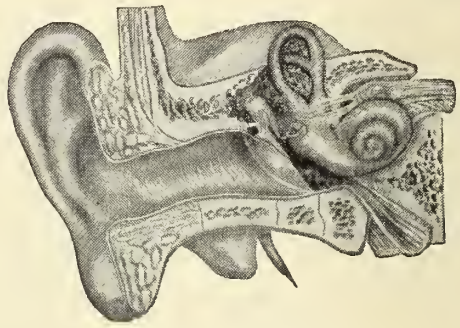
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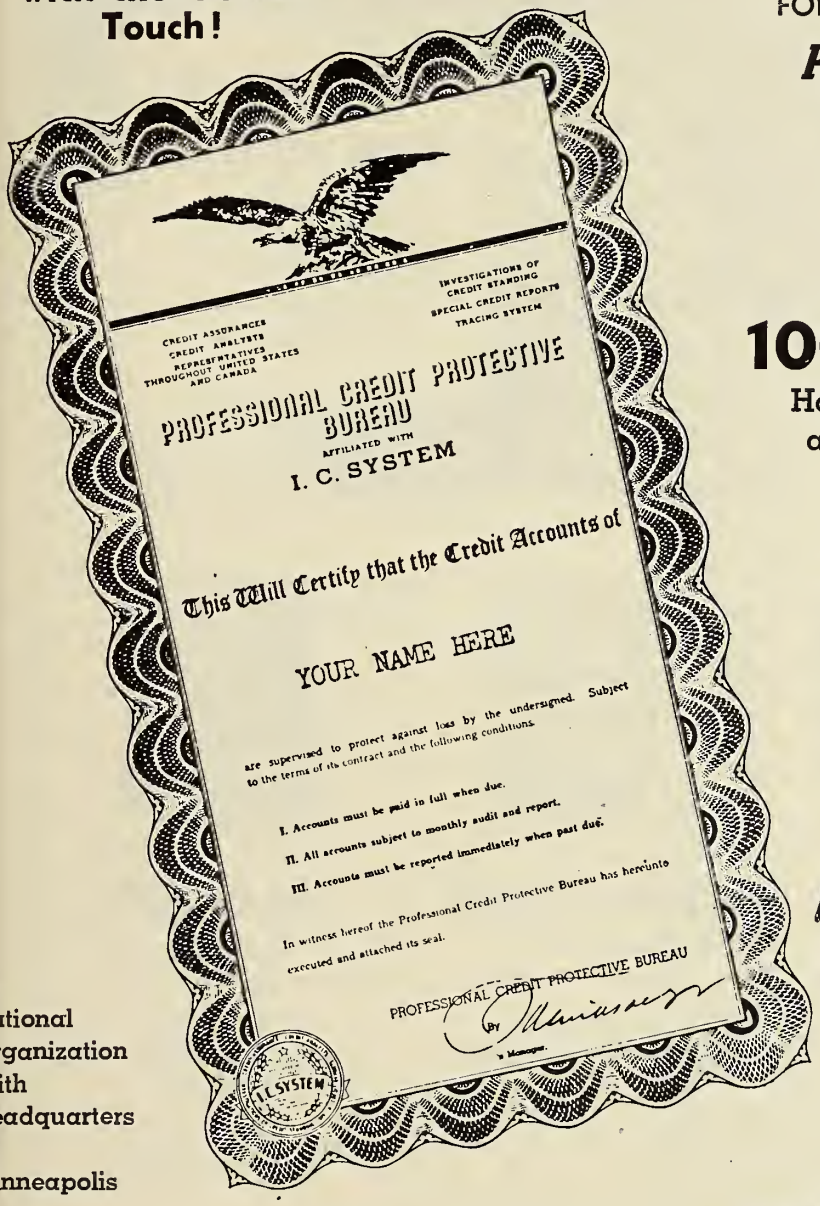
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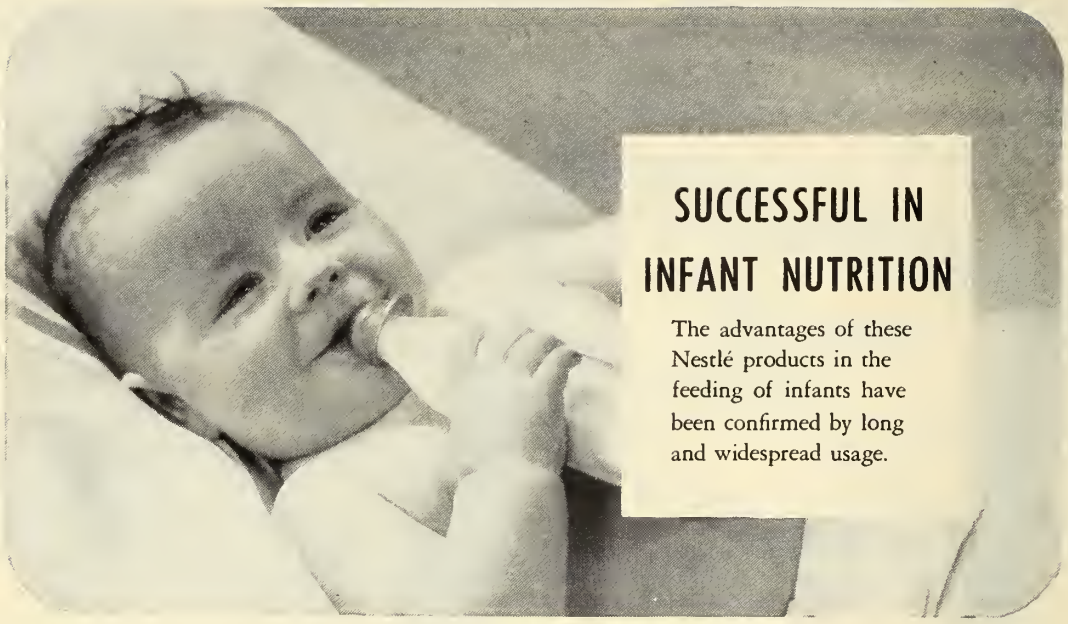
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References: 1. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:442, 1936.
2. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:452, 1936.
3. Sahyun, M.: *Am. J. Dig. Dis.*, 13:59, 1946.

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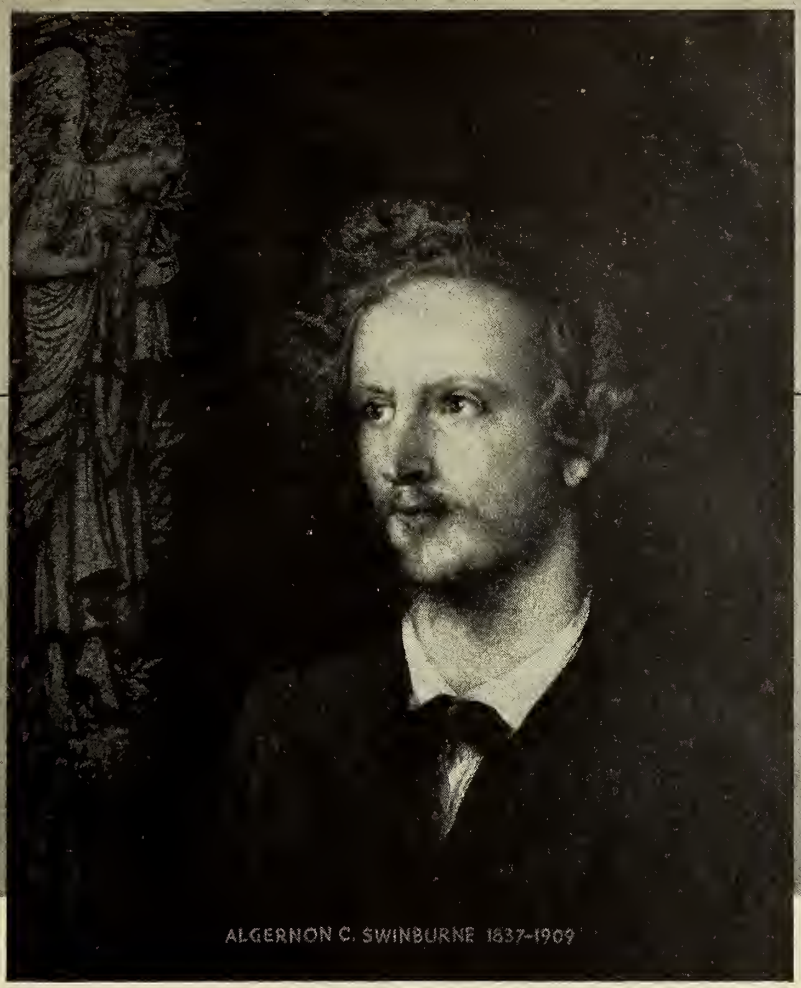
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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 32 July, 1949 No. 7

THERAPEUTIC PROBLEMS ENCOUNTERED IN ACUTE POLIOMYELITIS

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MANY PEOPLE speak of poliomyelitis in the same way that they do of the weather, that is, we know a lot about it, but we cannot do anything to control it. In general, this may be true insofar as the control of epidemics is concerned, and it is also probable that we will be able to do little about this phase of the problem until a satisfactory method of vaccination is perfected. At present our main efforts are directed against the mortality and complications of the acute phase, and toward improved muscle re-education and rehabilitation of the subacute and convalescent stages. These latter phases of the problem are extraordinarily important but do not lie in the province of this paper. The aim of this paper is to review the therapy of the acute phase. It is particularly important that all practitioners be aware of the problems encountered in the acute case since decisions about therapy are frequently made while waiting for transfer of the patient to a "polio center."

Specific therapy against the poliomyelitis virus has not yet been found. Immunotherapy with antiserums from horses or convalescent serum from human cases no longer is accepted as being of real value. Convalescent serum is still used in a few places with the feeling that it might do some good but at least does no harm. However, the experience of the early thirties with comparisons of carefully controlled groups of treated and untreated cases has taught us the futility of serum therapy. This has been re-emphasized recently by the carefully controlled studies of Bahlke and Perkins, in which no therapeutic effect followed the administration of large doses of gamma globulin representing huge amounts of human plasma.[1]

Numerous drugs have been suggested in the past and have been tried in sporadic instances. In some cases coincidental improvement occurred, so that false hopes for a cure arose. The most recent drug to be given a clinical trial was phenosulfazole, or "darvisul," which came to attention this past summer. Because of some encouraging experiments with a mouse encephalomyelitis virus carried out by Sanders, this drug was used rather extensively in Texas and North Carolina in 1948. Unfortunately, the resultant publicity was a little premature, as well as somewhat overly optimistic, and the lay press assumed that a cure had been found. Our experience with phenosulfazole began somewhat late in our epidemic, but recognizing the need for a controlled study, we alternated early nonparalytic cases in order to compare the results in treated and untreated cases.† In a disease as variable as poliomyelitis it must be emphasized that the results of isolated treated cases have no significance, and that one cannot compare the results in different epidemics or patients treated at different periods during the same epidemic. Due to the limited supplies of the drug, at first we limited our cases to alternate nonparalytic children and to all patients with bulbar or respiratory

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TABLE I. PHENOSULFAZOLE TREATMENT OF POLIOMYELITIS

Cases Treated:		
Nonparalytic	18	(Alternated series)
Febrile Paralytic	12	
Bulbo-Respiratory	12	
Total	42	
Reactions:		
Nonparalytic Group		
Vomiting in Treated Group		12 (67%)
Vomiting in Control Group		2 (11%)
Bulbo-Respiratory Group		
Hemolytic Anemia		1

TABLE II. RESULTS OF PHENOSULFAZOLE TREATMENT

Nonparalytic Group	*Treated*	*Not Treated*
Cases	18	18
New Paralysis	5 (28%)	5 (28%)
Fever < 100.5°		
From Onset	3.6 days	4.0 days
From Admission	2.2 days	1.6 days
Fever < 99.5°		
From Onset	4.6 days	5.1 days
From Admission	3.5 days	2.7 days
Bulbo-Respiratory Group		
Cases	12	19
Deaths	2 (16%)	6 (31%)

disease. The latter group was included since it was felt that some additional information might be gained if a decided difference in mortality rates was found. In all we treated forty-two patients; eighteen were nonparalytic on admission and were compared with eighteen alternate controls; twelve were bulbo-respiratory cases, and twelve were febrile paralytic patients who were treated without controls at the end of the epidemic (Table I). The results of treatment of the first group were evaluated by comparing the incidence of new paralysis in the two groups and by comparing the duration of fever in the two groups (Table II). It is obvious that no significant difference was found, although this group is still too small to have statistical significance. In comparing the deaths in the bulbo-respiratory groups there is an apparent improvement in the treated series. However, this improved mortality loses its significance when one realizes that these are not alternate cases and most of the untreated series were early in the epidemic at which time certain improvements in care were not in operation. Minor reaction to this drug was common, as shown by the incidence of vomiting. Only one serious reaction, a severe hemolytic anemia, was encountered. Although extensive controlled studies have not been made, it is now the impression of other groups also that phenosulfazole is ineffective in the treatment of poliomyelitis, and laboratory studies in experimental animals bear this out.

The newer antibiotics such as aureomycin and chloromycetin are also ineffective in experimental infections and almost surely are of no value in human cases. The search for a specific drug must be encouraged, but even if found it would be of very limited usefulness because of the rapidity of the destruction of nerve cells after infection occurs. Despite the fact that patients were hospitalized just as soon as the diagnosis was suspected, 65 per cent of our patients were already paralyzed by the time of admission. This rapid nerve cell damage offers an almost insurmountable obstacle to effective drug therapy.

The antibiotics, particularly penicillin, do have a place as prophylactic agents against secondary bacterial infection. We feel that all bulbo-respiratory cases should be treated with penicillin in order to decrease the incidence of pneumonia in these cases.

Another approach to the therapy of the acute stage has been an attempt to relieve the pain and muscle spasm that is present in most of the patients. This is not only for comfort, but also to decrease the disability caused by the muscle spasm, and to make easier the re-education of the muscles. The older techniques of prolonged immobilization in splints or casts have been almost universally abandoned in favor of hot moist packing or hot tubs. It is my impression that the variations of this regime to suit the individual patient that are now being practiced are definite improvements over the older methods. Various drugs have been used to help relieve this muscle spasm. Prostigmine was given an extensive trial in North Carolina in 1944, and elsewhere, but there never seemed to be a statistically significant difference in treated and untreated cases. Curare has also been advocated to relieve the excess muscular activity. It is possible that small doses of curare may have a place in relieving the occasional patient with respiratory embarrassment from spasm of the thoracic muscles. However, I have not been particularly impressed with the beneficial results reported from the use of this drug. Curare is a dangerous drug and should not be used lightly, but if the attending physicians are familiar with its use, there may be instances where muscle relaxation with curare might be attempted.

The most recent drug used for muscle relaxation is priscoline reported upon by Smith and his

TABLE III. BLADDER PARALYSIS IN POLIOMYELITIS, 1948

Admissions—169 Bladder Involvement—40 (23.6%)
Males—21 Females—19

Age Incidence in Years:

0—4	5—9	10—14	14—19	>20
22	10	6	1	1

Treatment:

Nonspecific	8 (20%)
Furmethide	32 (80%)

Results of Treatment:

Good	31 (97%)
Poor	1 (3%)
Reactions	7 (22%)

group last fall.[6] They believe that pain and spasm is due to persistent vasospasm set up by involvement of the sympathetic nervous system. With this in mind they treated poliomyelitis patients with intravenous procaine and then tried priscoline. A total of seventy-three patients were treated with priscoline hydrochloride by either intramuscular or oral administration. Symptomatic relief of spasm and pain was achieved in all cases in from one to fourteen days. It is too early to evaluate this drug at present since unfortunately this was not a controlled series of cases giving objective comparisons with untreated alternate cases. However, it does warrant further study and may prove to be a very significant advance in our treatment of this phase of the problem. We have not had an opportunity to treat enough children to have any opinion on its value. One child with severe pain and spasms was treated to the point of flushing for several days without noticeable improvement.

The complication of paralysis of the bladder has been treated very satisfactorily with one of the newer parasympatheticomimetic drugs, furmethide.*[3] Beginning in the 1944 epidemic we were impressed with the inconvenience and the danger of repeated catheterization in patients with paralysis of the bladder. At that time we were able to achieve satisfactory voiding in about 70 per cent of the twenty-one patients treated. Since then we have had an even better experience as we have learned more about the dosage. In 1948, 169 patients were admitted with acute poliomyelitis to the North Carolina Baptist Hospital, of whom forty (23.6 per cent) developed some difficulty with voiding (Table III). Of these, thirty-two (80 per cent) developed retention and failed to void after the usual nonspecific measures. Furmethide was administered to this group with satisfactory voiding in all but one adult. This man had been catheterized for four days before admission, and subsequently was discharged to the convalescent hospital with a retention catheter in place. This patient developed strong bladder contractions, but apparently sphincter spasm prevented voiding. In such cases the concurrent use of ergotamine tartrate has given release of sphincter spasm and resulting voiding, but this latter drug was not in use at the time this patient was seen. Our method of treatment has been to try to establish voiding by nonspecific measures if possible. When these measures are not successful, the smaller dose shown in the table is given subcutaneously, and the patient is then given the oral drug for two to five days (Table IV). If neither voiding follows nor other effects of parasympathetic stimulation such as flushing, sweating, or increased salivation, the dose is repeated in one hour or the larger dose is given. When strong bladder contractions follow but voiding does not occur, ergotamine tartrate is given with the repeated dose of furmethide. In some instances oral medication is sufficient to establish voiding. Undesirable reactions due to a generalized parasympathetic stimulation occurred in seven (22 per cent) of this series. Atropine sulphate immediately counteracts the effect of furmethide and was used for three of these patients. The one serious reaction that must be recognized is marked salivation in a patient with bulbar disease. In such cases one must be very cautious with this drug and be particularly careful to have atropine at hand in case an increase of salivation becomes troublesome.

TABLE IV. DOSAGE OF FURMETHIDE

Age of Patient (Years)	*Subcutaneous*	*Oral*
0—4	1.25-2.5 mg.	2.5 mg. t.i.d.
5—9	2.0 -3.0 mg.	5.0 mg. t.i.d.
10—14	2.5-5.0 mg.	5 to 20 mg. t.i.d.
15—19	2.5-5.0 mg.	
>20	2.5-5.0-7.0 mg.	

Almost all of the deaths in acute poliomyelitis are found in the bulbo-respiratory group so that one should pay particular attention to these patients. Except for occasional patients who die with signs of central envolvement only, these fatalities are due to direct paralysis of the respiratory muscles, or to secondary respiratory failure from interference with air exchange such as paralysis of the muscles of swallowing causing excess accumulation of mucus, involvement of the larynx, atelectasis, and pulmonary edema. It

*Kindly supplied for this study by Smith, Kline and French Co.

is very important to distinguish between these various factors, for the immediate treatment instituted will often mean the difference between life and death. For example, it is obviously important not to put a patient in a respirator whose difficulty is not respiratory paralysis but interference by mucus caused by pharyngeal paralysis. Extremes in postural drainage with the patient lying on his face, and careful suction of the pharynx are imperative for this latter type of case. In some instances of laryngeal obstruction and in the occasional patient where the excess mucus cannot be satisfactorily drained, tracheotomy may be necessary. The indications for tracheotomy have been re-emphasized recently by the Minneapolis group,[2,5] but we feel one should not be carried away in an overzealous use of this procedure. We surely do not feel that it should even approach being a routine in the treatment of bulbar cases.

There are some details in the management of respiratory paralysis that should be restated. Although many patients with paralysis of the respiratory muscles may get along without ever needing the help of the respirator, one should not postpone its use too long. The serious results of anoxia are well recognized, and if one waits for advanced anoxia to occur, permanent damage may have resulted. Oxygen therapy with or without the respirator is of great benefit. The improvements in the oximeter will make this instrument particularly valuable for following patient's oxygen saturation.

When a patient is put into a respirator, he must be observed very closely in order to prevent the complications of atelectasis or pulmonary edema. It is common experience to have a patient improve immediately as his inadequate respiratory efforts are taken over by the respirator, only to have him suddenly or gradually become anoxic again. One of the major reasons for this is the appearance of atelectasis or pulmonary edema. The main reason for this seems to be an increase in edema fluid due to the negative pressure, and the stagnation of edema fluid in the dependent portions of the lung. Much can be done to prevent these complications by careful attention to changes in the patient's position. Although we are all familiar with the need of changing the position of postoperative patients, one frequently sees patients in respirators left lying flat for days! Not only should the respirator be titled in a longitudinal plane, but the patient should also be turned frequently. We feel that the tilting of the bed is insufficient; therefore, we alternate the patient from back lying to complete face lying at least every two hours. One often hesitates to disturb the patient to this extent, but we feel that later difficulties can be avoided by doing so.

Another aid in preventing atelectasis and pulmonary edema is the use of a positive pressure mask using either oxygen or oxygen air mixtures.[4]† This technique was tried first in a patient who had gradually lost almost all air exchange after being in a respirator two days. Pharyngeal mucus was no problem, and bronchoscopy revealed no laryngeal obstruction nor bronchial plugging. Since positive pressure breathing will clear up pulmonary edema, this child was given positive pressure oxygen through an automatic cycling apparatus for several hours. Gradually the air exchange improved, and she was then alternated with the respirator and the positive pressure oxygen. Since that time we have continued to use this apparatus both therapeutically and also prophylactically. It is now our custom to give five to fifteen minutes of positive pressure breathing to all respirator patients every one to two hours. This device is also very useful to carry along a patient when the respirator must be opened for x-rays, bed changing, and other treatments. It does essentially the same thing as the new positive pressure domes, and can be used for several patients in rotation. We feel that the use of this positive pressure breathing during the first days in a respirator does much to prevent both pulmonary edema and atelectasis. Of course, once atelectasis has occurred, bronchoscopic drainage is necessary.

In summary I want to re-emphasize the two main facets of acute and convalescent care in poliomyelitis patients. Tremendous strides have been made in improved techniques of muscle re-education and the rehabilitation of paralyzed patients in the convalescent stage. However, most of this care falls into the hands of the orthopedic specialists and their able assistants, the physical therapy technicians. The care of the acute case is the province of the original family physician, the pediatrician or internist and the nose and throat specialist. By the co-operation of this latter team and the continual search for improved

†The positive pressure device used in this study was obtained from Mine Safety Appliances Company.

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RECURRENCE FOLLOWING INGUINAL AND FEMORAL HERNIA OPERATIONS

Three to Seven and One-half Years Follow-up

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THE SURGICAL repair of an inguinal or femoral hernia, though not generally considered a difficult operation, is not 100 per cent successful. Recurrences plague nearly every surgeon who cares to look for them, and "new" operations are frequently described, indicating failures with the old.

It appears to be the general opinion of writers on hernia that if a recurrence can be successfully treated at a second operation, there must have been an error at the first one, and that an appreciable recurrence rate reflects on the ability of the surgeon more than on any other factor.[7,17,21] Hence a close study of any recurrences that may appear is probably the best approach to improved results in hernia operations.

A recurrent hernia which is not treated early may progress in size to the point where, at the second operation, it becomes difficult or impossible to determine where the initial defect was. Little or nothing, then, is learned about the error committed at the first operation. Moreover, if treatment is delayed, there is lengthened disability, some risk of strangulation for the patient, and a greater difficulty for the surgeon in the second repair. On the other hand, patients in whom operation has once failed may not be eager to return. It seems evident, therefore, that all hernia patients should be recalled for examination at regular intervals of a year or less for many years after operation.

Without the data obtained by such examinations, the presentation of new operations and the evaluation of old ones is unconvincing; yet a study of final results, based on medical examinations at a significant interval after operation, is a comparatively rare finding in the large literature on this subject. The difficulty which is responsible for this situation will appear in the present study. Suffice it to say that a follow-up period of even three years is likely to include less than 80 per cent of recurrences (Table IV), and fewer cases can be followed as the years go by. The present work was undertaken to discover what has occurred to the patients operated upon in this hospital, three to seven and one-half years afterward, and to analyze possible causes of failure in those cases with complications or recurrence.

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Method of Follow-up

All patients operated on in this hospital for inguinal or femoral hernia between January 1, 1940, and June 30, 1944, are included in the study. The total number of patients was 264, with thirty of these having two operations. The follow-up was not complete. Altogether, 52 per cent of all the patients were followed by examination and an additional 11 per cent by letter. A further 9 per cent of patients were deceased at the time of study. Most of the examinations were done in the hospital, but in some cases the patient's doctor performed the examination elsewhere and sent in a report. In thirty-eight cases the patient was followed only by letter at first, and subsequently was seen for examination; the findings corresponded except in one case in which the patient was unaware of a recurrence.

A true recurrence is one in which the hernia reappears exactly as it was before operation, and is probably uncommon. A recurrent hernia is generally considered one which appears in the same inguinal-femoral region as that originally operated on,[21] and the broader definition is used in this study.

Results

Tables I and II.—The types of hernia encountered and the various operations used are noted in Table I. The relative incidence of bilocular hernias—direct-indirect inguinal (9 per cent) and inguinal-femoral (1 per cent)—is lower than would be expected. Usually, well over half of all hernias in patients over the age of thirty-five are bilocular;[7,11,18] 62 per cent of the patients in this series were over thirty-five. The high recurrence rates in those hernias diagnosed simple direct (31 per cent) or femoral (25 per cent) may therefore be in part due to overlooking of another locule. Some of them reappeared soon after operation.

TABLE I. RELATIVE FREQUENCY OF TYPES OF HERNIA AND OF TYPES OF OPERATION USED IN 294 HERNIAS

Also shows the number of times each operation was used for each type of hernia.

	Bassini	Halsted	Ferguson	*	Others	Total	%
Indirect inguinal	111	40	30		17	198	68
Direct inguinal	7	14	2		4	27	9
Direct-indirect	5	10	1		2	18	6
Femoral		1		25	3	29	10
Inguinal-femoral					3	3	1
Recurrent	3	7	1	3	5	19	6
Total	126	72	34	28	34	294	100
%	43	24	12	9	12		100

*The inguinal ligament was sutured to Cooper's ligament or to the pectineal fascia.

Three of the femoral hernias reappeared as inguinal, but this may have been due to displacement of the inguinal ligament,[16] which was used in the repair, rather than to overlooking another locule. Similarly, two patients developed femoral hernias after repair of large indirect inguinal hernias in which the inguinal ligament was utilized. One of these patients had the first operation ten years before, and only the second, after which there has been no recurrence, is included in this series. As noted in Table II, the recurrence rates in those hernias which were diagnosed bilocular were comparatively low.

The over-all recurrence rate was 10.8 per cent.

Table III.—Recurrences for each type of operation are listed in this table. The procedures designated Halsted,[8,9] Bassini,[2] and Ferguson[6] are those described under these names in textbooks of surgery[3,12] to avoid confusion with other operations described by these authors. The Halsted second operation for hernia is quite similar to the Ferguson and is listed as the latter in these tables. There were a number of other operations, including those of Andrews,[1] Downes,[4] Lotheissen[13] and Wangensteen,[20] each of which was performed in only one or a few cases in this series. These are grouped with the few cases in which the operative record was incomplete, as the numbers were too small to allow any conclusions.

It would be misleading in any case to interpret Table III as showing superiority of one operation over another; recurrences for each type of operation occurred predominantly with certain types of hernia and not with others. The Halsted operation was used more commonly than other

TABLE II. RECURRENCE RATES IN THE 186 HERNIAS FOLLOWED, IN RELATION TO TYPE OF HERNIA

	Operations	Recurrences	%
Indirect inguinal	129	8	6
Direct inguinal	16	5	31
Direct-indirect	9	1	11
Femoral	16	4	25
Inguinal-femoral	3	0	0
Recurrent	13	2	15
Total	186	20	10.8

TABLE III. RECURRENCE RATES IN THE 186 HERNIAS FOLLOWED, IN RELATION TO TYPE OF OPERATION

	Operations	Recurrences	%
Bassini	85	5	6
Halsted	51	5	10
Ferguson	15	1	7
*	13	4	31
Others	22	5	23
Total	186	20	10.8

*The inguinal ligament was sutured to Cooper's ligament or to the pectineal fascia.

operations for direct and recurrent hernias, which have high recurrence rates with any type of operation. However, it is apparent that suturing of the inguinal ligament to Cooper's ligament or to the adjacent pectineal fascia has been an unsatisfactory method for repairing femoral hernias in this series.

Recurrences were listed for individual surgeons including ten staff members and thirty-three interns and residents. Although the experienced surgeons fared no better than the novices in the final figures, it should be remembered that the former group took care of nearly all the difficult cases.

Dr. Wangensteen, who had one recurrence in twenty-three followed cases, employed Halsted's operations I and II for the most part. He believes that, when properly performed, they give the best results. His own cases bear this out, in contrast to the findings in the rest of the series.

Altogether, forty-two patients in the series had bilateral hernias. Of these, nineteen (45 per cent) stated that the hernias had appeared on both sides at the same time. In the remaining twenty-three patients the contralateral hernia appeared at an interval of from one to thirty-two years, averaging eleven years, after the first. The incidence of a contra-lateral hernia in a patient who had recently developed one hernia was therefore 9.4 per cent in this series. If the patients

were followed longer, the incidence would doubtless be higher.

Of the patients who were followed, there were twenty who had bilateral operations and nine others who had bilateral hernias, only one of which was repaired during the period of study. In these twenty-nine patients, who had forty-nine operations, there were nine recurrences, a rate of 18 per cent. In the remaining 137 patients with unilateral hernias, there were eleven recurrences (8 per cent). The probability of this difference occurring by chance is such that its significance is doubtful ($p = 0.05$).

Of the twenty patients followed, in whom bilateral hernias were repaired, nine had them both operated on at the same time, and four of these eighteen hernias recurred, a rate of 22 per cent. In the remaining eleven cases where the two operations were done at different times, there were four recurrences, a rate of 18 per cent. The difference is insignificant.

The average time of recurrence was two years after operation.

It would be of interest to know the exact types of hernia which appeared as recurrences, in relation to the original hernias, in all patients. Information on this point is meager, however. In many instances the original diagnosis is obscure, the patient having been operated on elsewhere many years before. In others, the recurrence was so large that the original defect could not be precisely located even at operation.

It may be assumed that many early recurrences are due to failure to find accessory locules or to extirpate the sac completely. The mechanism of late recurrences is not well explained. One of our patients, for example, entered the navy after his operation and was examined at frequent intervals until his discharge four years later. Then, while a student, he noted the recurrence at five years.

Table IV.—The purpose of presenting this table is to illustrate the very considerable difference in recurrence rates depending on the length of the follow-up period. The first column shows the cases in the present series as they were on January 1, 1945, at which time all cases would have been followed at least six months, and some up to five years, after operation. The over-all recurrence rate at that time would have been 4.3 per cent, with 50 per cent of recurrences taking place within six months and all the rest within three years.

TABLE IV. RELATIVE INCIDENCE OF RECURRENCES AT VARIOUS INTERVALS AFTER OPERATION, AS MODIFIED BY LENGTH OF FOLLOW-UP PERIOD

Time after operation	Present series as of Jan. 1, 1945 (Fol. 6 mo.-5 yr.)		Present series on July 1, 1947 (Fol. 3-7½ yr.)		13* of 19 cases, recurrent hernia (Table I)	
	Recurrences	%	Recurrences	%	Recurrences	%
0-6 months	4	50	4	20	2	15
6 months-3 years	4	50	12	60	5	39
3-7½ years			4	20	3	23
7½-20 years					3	23
Total	8 (4.3%)	100	20 (10.8%)	100	13	100

*Time of recurrence not known in 6 cases.

The second column shows the present status of the same cases, now followed from three to seven and a half years after operation. Only 20 per cent of recurrences now appear to take place within six months, and 20 per cent occurred after three years. The general recurrence rate has more than doubled.

In the third column the patients represented are a different group, namely those with recurrent hernias already present who came for operation during the period of study. These recurrences took place as long as twenty years after operation. This random sample of recurrent hernias, which happen to have been followd for a longer period than that of this study, indicates further the trend noted in the first two columns. Only 54 per cent of the cases in Column 3 took place within three years.

Two factors bearing on the incidence of recurrence are age of the patient and the presence of chronic cough. The average age of patients with recurrence is eleven years higher than that of the other, and this is statistically significant ($p = 0.014$). Of five patients with persistent cough at the time of operation, four had recurrences, and this item is evidently important.

Table V.—The incidence of swelling of cord or testicle, including both hematomas and edema, was not associated with any one type of operation; after Bassini repairs it occurred in 11 per cent, after Halsted operations in 7 per cent, and after Ferguson operations in 12 per cent. One of the recurrences had this complication. Two of twelve cases subsequently examined had atrophy of the testicle on the affected side.

TABLE V. POSTOPERATIVE COMPLICATIONS AND MORTALITY FOR THE ENTIRE SERIES

278 operations at which 294 hernias were operated on.

Complications	Hernias	%
Swelling of cord or testicle	23	8
Wound infection	21	7
	Operations	**%**
Thrombophlebitis	4	1
Pneumonia	5	2
Decubitus ulcer	3	1
Atelectasis	1	0.4

Mortality: 8 postoperative hospital deaths, or 2.9%.

	Age	Cause of death
1.	60	Pulmonary embolism.
2.	70	Parotitis.
3.	57	Wound infection, sepsis, diabetes.
4.	73	Acute heart failure, 3 days after operation.
5.	78	Cerebral hemorrhage (heparin for thrombophlebitis), diabetes.
6.	81	Dissecting aneurysm.
7.	51	Acute liver failure.
8.	67	Peritonitis. Incarceration of hernia; repair 7 days after gastrectomy.

Wound infection was also present in only one recurrence, and was serious in only two cases.

The other complications, as well as the causes of mortality, are not peculiar to hernia operations. The average age of patients dying in the postoperative period was sixty-seven years, compared to forty-five years, the average age of all patients in the series.

Comment

Numerous follow-up studies beginning at six months after hernia operations have been reported. In the present series, 20 per cent of recurrences took place within six months. Fallis[5] found only 22 per cent occurring within six months and 48 per cent within three years. In a longer follow-up, on the other hand, of from six months to twenty-nine years, Taylor was able to find only 37 per cent of the patients operated on. Most of these were followed five years or less, and over half of them only by letter. Results are better where a surgeon follows all his own patients, living in the same locality, though the numbers are small. Veterans' hospitals have provided extensive follow-up studies,[7,18] but the patients are a selected group.

It is inevitable that some patients should be lost: 9 per cent of the present series were deceased; but the failure to follow other patients was partly due, as indicated by comments of many patients, to lack of understanding on their part that examination was advisable. Surgeons, confident in their success, had frequently advised the patient that no return visit was necessary.

Most of the statistics in this and other papers on the subject should be qualified by the obvious fact that any of the patients still living and apparently cured may yet have recurrences. The discrepancies in reported results of various operations for hernia are partly explained by this observation, as illustrated in Table IV. Similarly, the percentage of recurrences taking place within six months after operation becomes smaller as the period of follow-up is increased. Those authors presenting a short follow-up always have a high percentage of recurrences taking place within a short time, which mistakenly gives the impression that a longer study is unnecessary.

To obtain the correct incidence of recurrence and relative time of recurrence would require that all patients in the series be followed at regular intervals until they died or developed recurrence. In a more ideal study than the present one, this requirement would be complemented by more thorough diagnoses, especially by accurate descriptions of recurrences in an early stage, and by planned variations in operative procedure.

From the present work, however, we may learn that excellent results can be obtained by an experienced surgeon using a time-tried operation. Much improvement can be expected, therefore, from a study of avoidable errors contributing to recurrence with established methods., in contrast to the emphasis often placed on new types of operation. Many writers[4,10,11,15,18] have pointed out the advisability of opening the peritoneum at the internal ring and making a thorough digital exploration for accessory locules, regardless of the type of hernia diagnosed before operation. Operative records in the present series do not always mention such exploration. Some of the femoral hernias were repaired entirely from below the inguinal ligament, a method which restricts examination of the inguinal region.

Finally, it may be remarked that the problems of femoral hernia, femoral recurrence of inguinal hernia, and late recurrences of all types may not be solved even by the best performance of the classical operations. It is possible that certain procedures, not used in the present series, involving more radical reconstruction of the inguinal and femoral regions without suturing the inguinal ligament,[13,16] or the use of autogenous fascial sutures,[14] would offer better protection against these types of recurrence. Of two different operations having the same recurrence rates early

in the follow-up, one might prove more effective against late recurrences. Information on this matter is not at present available.

Summary

Two hundred and sixty-four patients, having undergone 294 operations, formed the basis for this study. Of these, 63 per cent were followed from three to seven and one-half years after operation.

The over-all recurrence rate was 10.4 per cent. Rates were highest in direct inguinal (31 per cent) and femoral (25 per cent) hernias.

The operation giving the highest recurrence rate (31 per cent) was that of suturing the inguinal ligament to Cooper's ligament or to the pectinal fascia. This was used for femoral and recurrent hernias.

The more experienced surgeons, though dealing mainly with difficult cases, had as a group the same recurrence rate as interns and residents.

A contralateral hernia developed at an appreciable interval, averaging eleven years, after the first one in 9.4 per cent of the patients. Bilateral hernias appeared at about the same time in 7 per cent of patients. The recurrence rate for bilateral hernias was 18 per cent, compared with 8 per cent for unilateral hernias. The recurrence rate for bilateral hernias repaired at the same time did not differ significantly from that when the two operations were done at different times.

The present series of cases, if reported as a six-month to five-year follow-up, would have had 4.3 per cent recurrences.

Other factors contributing to recurrences were older age, and persistent cough at the time of operation.

Swelling of the cord or testicle developed after 8 per cent of herniorrhaphies. It was not associated particularly with any one of the operations used. Testicular atrophy occurred in 17 per cent of the affected cases.

The mortality was 2.9 per cent. Causes of death were unrelated to the hernia operations as such. The average age of patients dying after operation was sixty-seven years, compared to forty-five years for the whole series.

Conclusions

1. Thorough exploration of every inguinal and femoral region should be carried out when operating for hernia in patients over thirty-five, regardless of the type of hernia diagnosed before operation.

2. Suturing the inguinal ligament to Cooper's ligament or to the pectineal fascia for the repair of femoral or recurrent hernias has been an unsatisfactory operation in this series.

3. Surgical experience improves results in hernia repairs. Excellent results can be obtained by practiced surgeons using the standard types of operation.

4. About 10 per cent of patients with a single hernia may expect to develop a contralateral hernia.

5. The recurrence rate was not increased by the performance of bilateral repair at the same operation.

6. Length of follow-up period, even up to twenty years, has an important bearing on over-all recurrence rates and on the apparent percentage of recurrences which take place early.

7. Patients who are in the upper age groups at the time of operation have higher recurrence rates.

8. Chronic cough at the time of operation predisposes to recurrence.

9. Appreciable mortality after herniorrhaphy appears in older patients, though unrelated to the hernia operation as such.

10. More adequate information than is contained in this and in similar studies, if it is to be obtained, will require that all patients operated on for hernia be persuaded to report regularly for follow-up examinations.

11. Many early recurrences can be eliminated by avoidance of well-known errors. The problems of late recurrences, femoral hernia, and femoral recurrence of inguinal hernia require more study.

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DIAGNOSIS AND TREATMENT OF COMMON FORMS OF RESPIRATORY ALLERGY

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WHEN ONE considers that respiratory allergy in both the seasonal and nonseasonal types is the most common form of allergy and that approximately 60 per cent are cases of allergic rhinitis, the true significance of respiratory allergy can be realized. The incidence of nasal allergy in the general population is about 3.5 per cent, which according to the present estimated population of the United States would constitute over five million individuals. There are no accurate statistics on the occurrence of bronchial asthma due to allergy. According to Army statistics, there were twelve asthmatics per thousand among the veterans receiving compensation, whereas two veterans per thousand had been previously eliminated before induction. About 1 per cent in this entire age group of eighteen to thirty-five suffered from asthma of the allergic type.

The common forms of respiratory allergy are, in the order of their frequency, seasonal hay fever or pollinosis, perennial allergic rhinitis or hyperesthetic rhinitis, bronchial asthma and allergic bronchitis. Any of these clinical disorders with common features of heredity, common periodicity, temporary disappearance, and eosinophilia should arouse the suspicion of their being allergic in origin.

The diagnosis of respiratory allergy is based first upon a thorough and painstaking history. In seasonal hay fever the symptoms should coincide with the common offending pollen antigens in the atmosphere in sufficient concentrations in the patient's environment. All practical textbooks on allergy contain charts or maps showing the geographical distribution of various species of offending pollens and at what time of the year they are of clinical significance in any particular locality. The pollinating season in Minnesota is relatively clearly defined. There are sixteen pollen groups in Minnesota causing hay fever. The trees of clinical significance blossom from the middle of April to the last of May. The grass pollens bloom from June until July and again the latter part of August and September. The weeds, such as pigweed, Russian thistle and the sages, prevail in the middle of July, but the ragweeds not before the second week in August, and continue until frost.

Skin tests with these sixteen pollen groups should be done by scratch testing, using the powdered pollen extracts or a 5 per cent glycerin extract. A reaction consisting of a wheal, particularly with pseudopods and with a zone of erythema, can be determined as positive in various degrees. Stock treatment mixtures containing these pollens in proper proportion for various sections of the country are furnished now by the various biological houses. Otherwise, a special treatment mixture may be made consisting only of the pollens to which the patient reacted in proper proportion. Patients sensitive to the common offending pollens may not react to skin tests, so that other methods involving the use of the mucous membrane or conjunctiva, or direct exposure to the suspected offender may have to be used. Sometimes the intracutaneous test on the arm will reveal an offender when a scratch test is negative. The back should never be used for intracutaneous testing with pollen extracts. Passive transfer or indirect skin testing is sometimes necessary when the skin is unsuitable for direct testing. In the perennial nasal allergies a careful history of the patient's occupation and home environment is essential. This will determine whether house dust and its various components, the common air molds, or industrial dusts are the chief offenders. Scratch or intracutaneous tests are then done with those inhalant allergens to which the patient is exposed in appreciable amounts.

Diagnosis of Nasal Allergy

The making of an accurate diagnosis of allergy of the nose and paranasal sinuses requires careful consideration and correlation of the following points:

Symptoms.—The typical symptoms of nasal allergy are similar but in varying degrees, whether seasonal or perennial. They consist of sneezing, itching, nasal discharge and obstruction. Atypical

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cases, however, are characterized by stuffiness and postnasal discharge with little or no sneezing. These can be easily overlooked. Frequent recurring colds, particularly in children, must be differentiated from allergy.

Nasal Changes.—Although the typical allergic mucosa is characterized by pallor, bogginess, and sometimes edema or polyposis, there are many instances in which the mucosa appears normal or somewhat reddened.

Cytology of the Secretions.—Nasal secretions and, when available, sinus secretions should be stained and examined microscopically for eosinophiles, neutrophiles or both. The cytologic picture is frequently the most important factor in diagnosis. It must be emphasized that the common cold is an ever-present complication, and the cytologic changes are the most important guide in its recognition. A nasal smear revealing more than 10 per cent eosinophiles, which appear in clumps, indicates a nasal allergy.

It is sometimes necessary to make other tests, as previously mentioned, such as the mucous membrane test or the ophthalmic test or direct exposure to the suspected offender.

X-Ray of the Sinuses.—Various degrees of cloudiness are the rule rather than the exception in allergic sinuses. Changes may be of short duration and transitory. A cloudy sinus, therefore, does not always indicate infection. When the history of allergy is present and there is a bilateral clouding, the chances favor the diagnosis of an allergic condition, whereas a unilateral clouding may indicate an infection but not necessarily so. X-Ray findings should be correlated with the cytologic picture and bacteriologic cultures.

Bacteriology.—To secure reliable nasal cultures and avoid contamination, sinus cultures must be taken under strict aseptic precautions. The findings should be correlated with the cytology, and acute, subacute and chronic complicating infections should be carefully evaluated.

Histopathology.—All tissues removed from the nose and paranasal sinuses should be examined routinely, and the findings correlated with all the diagnostic factors already enumerated.

Time will not permit the enumeration of the other associated manifestations in this field of respiratory allergy, such as: (1) involvement of the external ear, eustachian tube, middle ear, cochlea and labyrinth, resulting in deafness, tinnitus and dizziness; (2) recurring swellings of the parotid and submaxillary glands; (3) involvement of the larynx and esophagus; (4) allergy of the eye, and (5) allergic headache.

Nasal allergy may be associated with gastrointestinal allergy, bronchial asthma, allergic bronchitis, skin allergy—urticaria, eczema, angioneurotic edema, purpura, contact dermatitis—urogenital allergy and even serum disease. In the observation of children with frequent recurring colds and bronchitis, the otolaryngologist and pediatrician must determine whether allergy or infection or both are the cause of symptoms. Among the allergic patients in this group too many tonsillectomies are unnecessarily performed.

Clein has recently shown that when allergic symptoms are properly treated in children who require tonsil and adenoid removal, the incidence of regrowth of lymphoid tissue in the tonsil fossae is negligible—3 per cent compared to 27 per cent in undiagnosed, untreated, allergic children.

Persistent bronchitis in children, not infrequently in the absence of nasal symptoms, is of allergic origin and often precedes the development of asthma. Chronic disease of the paranasal sinuses in children is often allergic and not primarily caused by infection.

In adults nasal stuffiness and postnasal discharge even in the absence of sneezing may be allergic in origin. Although a submucous resection is sometimes necessary in these cases, it may fail to give adequate relief. Allergic management should always be tried before resorting to the use of the cautery or escharotics.

Treatment

By and large, prevention is the ideal treatment of the various forms of allergy. In order to obtain this objective, specific or immunologic measures should be instituted based upon all the investigative methods at hand, as well as a detailed history taking, cutaneous tests, and clinical trials with suspected excitants. Preventive measures should be taken in the preclinical, as well as the clinical, phase of allergy. A preclinical phase of allergy occurs usually before the age of ten years and such an individual may possess only a latent or potential capacity to become sensitized. This

can only be suspected and not demonstrated, based upon the familial allergies and a demontsration of positive skin reactions before symptoms are manifest. Where the child has not shown allergic respiratory symptoms and there is a strong family history of allergy accompanied by relatively strong skin test reactions to inhalants and foods, every effort should be made to remove the known cause or causes by rearrangement of the environment or the patient's diet, or if there is a focus of infection, by surgical removal.

Crowe and Ward's method of irradiation of the hyperplastic and infected tissue of the nasopharynx may be helpful. In the control of nasal allergies, practical avoidance measures and immunization measures frequently result in 80 per cent relief. When infection is present, the antibiotic agents may be tried according to the type of infection present, but it must be remembered that these antibiotics may themselves sensitize the patient and cause distressing symptoms. The antihistaminic drugs, owing to their local and cerebral sedative action, prevent or inhibit clinical symptoms by blocking or lessening the effects of the offending histamine type of substances. They do not, however, block the offender from continuing to invade the sensitized mucous membranes, and patients receiving antihistaminic therapy alone for upper respiratory allergy without concompitant immunization measures may later develop asthma. Unless the patient is receiving simultaneous immunization, the shock organ merely changes from the upper to the lower respiratory tract. The most beneficial effects are obtained when used in conjunction with immunization measures, by preventing systemic reactions from high doses of pollen or the inhalant extracts by administering 25 to 50 mg. about a half hour before the antigen injection.

Diagnosis of Bronchial Asthma of the Allergic Type

It is usually relatively easy to diagnose bronchial asthma. The history is most important and frequently sufficient. No other disease simulates recurrent attacks of bronchial asthma, which is characterized by dyspnea, wheezing, orthopnea and coughing with more or less complete freedom from symptoms between paroxysms. Where there are little or no intermissions as in chronic asthma, there may be some doubt as to its allergic origin. The presence of generalized wheezing and prolonged expiration, eosinophilia in the blood and/or sputum, the presence of other allergic conditions in the same patient or the presence of allergy in the immediate family, the demonstration of relief from epinephrine, the roentgen findings of increased hilus shadows and a depressed diaphragm with a poor excursion, and the presence of positive skin tests confirmed by clinical tests usually substantiate the diagnosis, although any one of these alone may occur in nonallergic cases. In the chronic asthmatics the presence of emphysema and chronic bronchitis is common.

The specific diagnosis depends mainly on a careful history with questions, particularly referrable to orthopnea, wheezing, coughing and expectoration during the attacks. When a cough is present with or without asthmatic spells, there may be an associated complication, such as chronic bronchitis or bronchiectasis, or some chronic infection such as pulmonary tuberculosis. The expectoration in uncomplicated asthma is usually colorless, scanty, and present only toward the end of the attacks. If there is an excessive amount of early morning sputum, particularly when mucopurulent, bronchiectasis should be suspected; an iodized oil roentgen film may confirm the diagnosis. Various types of bronchitis may have continuous expectoration of purulent sputum. Slight hemoptysis may occur in severe asthma with hard coughing. Large amounts of blood should cause one to suspect bronchiectasis or pulmonary tuberculosis, or both. Fever is commonly present in asthma in children and may also occur in adults, especially if there is an intercurrent infection. Loss of weight does not usually occur except in the presence of chronic asthma, such as status asthmaticus with inability to eat. Loss of weight in patients with a mild asthma may be the result of carcinoma or pulmonary tuberculosis. The presence of pain in severe attacks is frequently due to the use of accessory muscles of the chest and does not necessarily mean heart disease or pleurisy.

Cohen described a type of allergic asthma in children commonly diagnosed as pneumonia. Children with asthma frequently retain the mucous secretions which become inspissated into tenacious plugs as a result of dehydration from the loss of fluid in vomitus or through the expired air. Children frequently have nausea and vomiting with their attacks and get relief when these mucous plugs are coughed up. There may be various grades of atelectasis present in this type. Poor

drainage may result in a low grade pneumonitis. In these cases impaired resonance, distant breath sounds, bronchial breathing, and moist and dry râles may be heard accompanied by a temperature of 103° to 104° F. The roentgenogram reveals transient areas of atelectasis and pneumonitis. A baby with allergic asthma may manifest very little labored breathing. A simple way of eliciting wheezing or sibilant râles on expiration is to have the child try to blow out a candle.

Cardiac asthma is characterized by the following: attacks are very few; there is pulmonary edema; the onset is usually after forty years of age; there is associated hypertension, coronary disease, aortic regurgitation, or chronic nephritis; eosinophilia of the blood and sputum are absent; there is no prolonged expiration, and the moist râles are located usually at the lung bases with some wheezing; there is cold, clammy skin; the heart is dilated and the pulse is often thready and irregular; epinephrine produces ill effects; skin tests are negative; the circulation time is usually prolonged. Cardiac asthma is also sometimes confused with other cardiac conditions such as chronic decompensation. Hysterical dyspnea may sometimes resemble serious heart failure.

Bronchial asthma on the other hand is characterized by the following: there is a history of previous attacks; there is obstruction in the lower air passages; the onset is early in life; there is allergy in the patient and family; eosinophilia is present in the blood and sputum; there is wheezing, and prolonged expiration all over both lungs; there is warm perspiration; the heart is usually small; the pulse is good; the fear complex is not as great as in heart failure; morphine is dangerous and epinephrine usually gives some relief; skin tests are positive; elimination of cause gives relief, sometimes complete; the circulation time is normal.

Treatment

The most annoying form of respiratory allergy which disturbs the general practitioner or the chest specialist is bronchial asthma, particularly in the acute form or status asthmaticus. When this is present, symptoms are treated first, and following relief the investigation of causative factors is commenced. The patient usually is very apprehensive and should be reassured that patients rarely die of an acute attack of asthma. Status asthmaticus is considered to exist when all the usual orthodox forms of therapy have failed. Unlike chronic intractable asthma, it is an acute condition which is usually reversible.

The older the patient with bronchial asthma, the greater the chance of both extrinsic or intrinsic infective factors being present. In the chronic infective type, the use of antibiotics sometimes are startlingly beneficial. Aerosolization may be used with the antibiotics alone or preferably combined with concentrated epinephrine or Isuprel, with the flow meter set between 4 and 5 liters per minute on the oxygen tank when oxygen is used as a conveyor. Higher pressures with the proper nebulizer such as the DeVilbiss No. 40 may also be used. Foot and hand pumps generating compressed air are now available and less expensive. In any event the nebulized particles should be so fine as to be practically invisible. The patient should be told to breathe in gently and not forcibly, with the mouth wide open, while the nebulization is taking place, and to hold the breath if possible momentarily and not to exhale forcibly. By this method, the finer particles penetrate the lower respiratory tract. Ten per cent glycerin added to the aerosolization mixture helps to stabilize the particles. For an aerosol solution, the author obtains very satisfactory results with a combination of daily inhalations, from five to seven days in succession, of 25,000 to 50,000 units of crystalline pencillin in isotonic saline solution to which has been added 0.1 c.c. of concentrated epinephrine or Isuprel and 0.1 c.c. of glycerite of peroxide. Instead of penicillin, a combination of streptomycin and tyrothricin (1:2,000 dilution) has not produced any toxic reaction. Bacitracin has also been employed. Also for aerosol therapy other remedies such as a 5 per cent solution of sodium sulfathiazole may be used.

In the treatment of status asthmaticus, sedation and hydration are paramount. For sedation, a retention enema of 2 to 3 drams of paraldehyde in 1 ounce of warm water, introduced high into the rectum by means of a male catheter attached to a closed syringe, results in a very satisfactory sedation and does not cause the irritation produced by ether in olive oil. Also 100 mg. of Demerol, to be used only in acute cases of asthma, may be very helpful. Hydration consists of an intravenous injection by the slow drip method of a liter of 5 per cent (isotonic) dextrose, or in some cases, 500 c.c. of 10 per cent dextrose in distilled water. Dextrose in greater concentra-

tions up to 50 per cent has repeatedly been advocated. It is more desirable to use 5 per cent dextrose which is isotonic, and furnishes both water and calories. This solution should also contain 3¾ grains (10 c.c. ampoule) of aminophyllin and 0.5 to 1.0 c.c. of 1:1000 solution of epinephrine and should be given at the rate of 60 to 80 drops per minute. Distilled water is preferred to isotonic sodum chloride solution since there has been ample evidence furnished that sodium chloride will make asthma worse. This mixture may again be administered in six to eight hours if necessary. One should not follow dextrose with insulin. Some form of vitamin B complex and vitamin C may be given in the saline or dextrose solution or intramuscularly, especially in those patients who are very weak from inability to take proper nourishment. If necessary to maintain nutrition, blood plasma or a blood transfusion of 250 to 500 c.c. may be necessary. Oxygen or preferably oxygen and helium may be administered by means of a tent or mask or nasal catheter.

In the treatment of bronchial asthma of the less acute type, each patient presents an individual problem. There is no treatment that is always best nor any that must always be used first. The management of these patients depends upon a careful examination and continued observation of the patient. A thorough general examination should be made of all the domains of the body when determining influencing factors. When possible, there should be a change of environment, preferably to a hospital and in an allergen-free room. When treating a patient at home every measure should be taken to make the room as allergen free as possible by using allergen-proof bedding or encasings. Any articles which may collect dust, such as drapes and rugs should be eliminated. There is now on the market a preparation known as "Dust-Seal" which when applied to specific surfaces (floors and primarily fabrics, such as carpets and upholstered furniture and blankets) imprisons or seals the particular matter known to allergists as house dusts, preventing their dissemination and contamination of the air. The dust particles are immobilized by this procedure, and the preparation is harmless to fabrics.

For immediate relief the sympathomimetic amines, epinephrine or ephedrine, or a combination of epinephrine and ephedrine, as well as the various epinephrine-like (synthetic) group such as ephetonin, neosynephrine, propadrine, Orthoxine and Isuprel are used. In this group also is included tyramine and amphetamine (benzedrine sulfate). The group of xanthines which have a local action on smooth muscle without nerve transmission and which are very beneficial in a large number of cases are theophylline-ethylenediamine (aminophyllin); theophyllin (theocine); theobromine, and theocalcin. These xanthines are frequently combined with one of the sympathomimetic amines and one of the barbiturates in capsule or tablet form. Where the secretions are scanty, potassium iodide or potassium iodide in combination with apomorphine makes a very effective expectorant as well as a cough sedative. Aminophyllin is best given in concentrated form when treating the acute asthmatic. As a rule, 3¾ grains is first given to determine the patient's toleration; 7½ grains may then be used. These come prepared in 10 and 20 c.c. ampoules and should be administered slowly intravenously. Precautions should be taken in administering aminophyllin to patients who may have coronary disease. A feeling of warmth or flushing in the face is an indication to administer more slowly. Aminophyllin may also be given in suppository form. This form is particularly useful when continuing the effect of the aminophyllin. The use of aminophyllin will often relieve the epinephrine "fast" state.

As pointed out by Davison, a mixture of epinephrine hydrochloride, 0.5 to 0.8 c.c. with Demerol 50 to 100 mg. and apomorphine hydrochloride, grains 1/120-1/100-1/80-1/60, mixed together in the same syringe and given one-third every ten to fifteen minutes until all is given or until relief is obtained, may be very efficacious.

In relieving nervousness or apprehension when the patient is not sensitive to the barbiturates, injections of sodium phenobarbital are preferable. This drug should be administered in doses of 2 to 5 grains, as often as necessary, if the patient is sensitive to barbiturates, chloral hydrate, chloretone or bromides may be used in appropriate doses orally or by rectum.

In the treatment of acute asthmatics, bronchoscopy has been very effective in a number of cases. By means of this method the removal of mucous plugs may be life saving.

When treating some of the complications of acute or prolonged bronchial asthma particularly where there are signs of heart failure, 5 grains of citrated caffeine may be given orally, or caffeine sodium benzoate, grains 7½, by hypodermic

injection, may be tried, or Coramine, 5 c.c. intramuscularly or intravenously as a cardio-respiratory stimulant. Digitalis is used for impending right or left sided cardiac failure, and the dose should be enough to digitalize. It may be necessary to use the Levine tube through the nose to relieve gastric distention. Intestinal distention may be relieved by the use of a salt and soda enema and rectal tube. Pituitrin in small doses may also be given. Some patients respond well to the use of a saline laxative or particularly to a half to one teaspoonful by mouth of heavy magnesium oxide.

Recently, a 5 per cent solution of ethyl alcohol has been recommended intravenously when treating asthmatic paroxysm, but its use is not advocated since it is irritating to the veins, causes some pain, and is unpleasant to most patients. There is no specific indication for its use. Sometimes whiskey in two or three ounces, or a whisky, combination with aspirin, ten to fifteen grains, has been given when other medication is not available, but one must be sure that the patient is not sensitive to whiskey or to aspirin.

Roentgen (X-ray) Therapy.—For some patients with asthma who have not responded to careful allergic management, x-ray therapy has been beneficial, giving temporary relief for a few weeks or months. Marked relief has been obtained in about a fourth of selected cases, and reports of moderate relief in the hands of various roentgenologists ranged from 16 to 75 per cent.

Treatment by Hyperpyrexia.—It has been a common observation that asthmatics may show temporary improvement during or following fever resulting from typhoid or malaria, or even following an infection such as a large carbuncle. The best method is that described by Stoesser, treating asthmatic children in a room with heat and moisture.

Vaccine Therapy.—Vaccine therapy should be used with caution, especially in infective asthma, since our immunologic and bacteriologic knowledge is still vague. Skin tests with vaccines are of little or no value. The most favorable results are noted in patients who obtain relief with very small doses gradually increased weekly to a desired maximum followed indefinitely by this dose every two to four weeks. Overdosage is dangerous. The results are sometimes very gratifying but as a rule not dependable. The best role of vaccine therapy is the prevention of recurrences after removal of focal infection.

In cases of infective rhinitis associated with nasal allergy, vaccine therapy with stock vaccines or autogenous vaccines from cultures of the sinus, nasal or bronchial secretions may be tried, and the procedures are the same as described for infective asthma.

Nonspecific Therapy.—Such forms of therapy as injection of milk, liver or spleen extract, stock bacterial vaccines or other foreign protein, gold and other substitutes, autohemotherapy, or autogenous urinary proteose all have their advocates, with little or no proven or substantiated beneficial results.

Surgical Treatment.—The various surgical procedures consist of sympathetic block, extirpation of sympathetic bronchial ganglia and resection of the posterior pulmonary plexus. The surgical treatment of intractable bronchial asthma was initiated by Kümmell in 1923, who performed a unilateral cervical sympathectomy and removed a portion of the stellate ganglion. Leriche and Fontaine later advocated stellate ganglionectomy only. Various modifications of the operation have been developed, mostly in the European clinics. In this country, Rienhoff and Gay reported their results with bilateral resection of the pulmonary plexus with gratifying results.

Miscall and Rovenstine have more recently developed a more rational procedure in the surgical treatment of bronchial asthma. They stress the importance of differentiating the two types of asthma—the one with definite allergic sensitivity to which surgery offers little and which is best treated by hyposensitization, and the other in which there is no demonstrable sensitivity to foreign protein and where afferent stimuli produce an irritation as a result of recurrent or chronic infection of the respiratory tract. Their procedure is based upon the belief of numerous authorities on the subject, that in many asthmatics bronchial asthma is a reflex mechanism resulting from stimuli arising in an irritated focus in the respiratory tract. Impulses are transmitted over the afferent or sympathetic fibres to the central nervous system where broncho-constrictor impulses commence and return over efferent or parasympathetic

fibres to the bronchioles. These authors suggest that a novacaine block of the stellate and upper four thoracic ganglia is a definite diagnostic procedure in determining the role which the sympathetic system plays. They caution against the use of barbiturates or morphine before a novocaine block since the former produces bronchial constriction, and the latter depression of the respiratory center. Scopolamine may be used, however. If a patient is benefited by a unilateral cervicodorsal sympathetic block with novocaine, it can be followed by alcohol. Time will not permit describing the other surgical procedures.

When preventing recurrence of attacks, one must endeavor to give the patient the benefit of the following: (1) adequate treatment by diet and hyperimmunization and avoidance of overwhelming amounts of allergens; (2) prevention or treatment of infection; (3) relief of psychosomatic factors by proper training; (4) endocrine treatment when indicated, and (5) avoidance of physical and chemical precipitating factors as much as possible.

Finally, it may be proper to mention certain precautions which should be used in the treatment of bronchial asthma. One should never use morphine and never overtreat with any sedative drugs. When a patient requires 0.5 c.c. subcutaneously of epinephrine every two hours, he is becoming epinephrine "fast" and is not obtaining the physiologic effects of the drug but the toxic effects, which may be very harmful. The use of too large doses of aminophyllin is contraindicated, and it should never be administered too fast intravenously, especially in patients with coronary disease. Since patients are frequently allergic to many drugs, one should first determine whether the patient is sensitive to the drug to be administered. One should not use prostigmine for distention, and never use soap enemata, since the patient may be sensitive to the materials in the soap.

Psychosomatic Factors

In conclusion, owing to the increasing evidence that psychosomatic factors may play a prominent part in allergic diseases, some comment is probably necessary. Although allergic asthma is due in the large majority of cases to an immunologic reaction, it is obvious that other mechanisms and the variations in immunologic specificity contribute to producing a state of altered reactivity or allergy. Psychodynamics must be included to explain the changes of neurovascular reactions, either when acting independently or when combining with with immunologic reactions. With our knowledge of the role played by allergic factors in the etiology of bronchial asthma, our attention has been diverted from asthma's frequent association with emotional disturbances. Early medical literature frequently mentioned cases where asthmatic attacks seemed to have been directly provoked by sudden and violent emotion. It, therefore, becomes more difficult to evaluate the relation of psychogenic factors to the allergic factor. We must never depreciate the role that allergic factors play in respiratory allergy and in certain cases at least should consider that possibly psychogenic factors may hold a complimentary relationship to the allergic factors. There is no question in the minds of allergists that in order to precipitate the attack, even when exposed to an adequate dose of allergen, it is sometimes necessary to have supplemental emotional disturbances, fatigue, the menstrual cycle, and so forth, as it would appear that emotional conflicts might play a very important role in determining the threshold of sensitivity to the specific antigens. On the other hand, it may be possible that psychologic factors might be effective alone by lowering the patient's threshold of sensitivity to substances present in the patient's environment.

There has been much speculation concerning the physiologic mechanism by means of which emotional conflicts precipitate asthmatic attacks. Violent emotion such as fear, rage, sexual excitement and so forth cause a marked stimulation, just as overexertion or hurry will precipitate an attack. Muscular exertion, intense emotion and hurry all cause increased respiratory stimulation. It is then possible that the asthmatic shows a tendency to respond to increased respiratory stimulation with subsequent attacks. There are also a number of reported incidents which would suggest that an asthmatic attack is initiated when the respiratory system is subject to contradictory and unco-ordinated innovations which may result from abrupt inhibition or an intense emotional upset. On the other hand, there is strong evidence that these emotional disturbances are the effect rather than the cause. Psychotherapy has been helpful in some cases of bronchial asthma, particularly in psychoneurotics with asthma. This type of asthmatic patient obtains considerable relief when

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THE SYMPTOMS OF CHOLECYSTITIS

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THE development of the effectiveness of a particular therapeutic procedure often is an expensive and laborious process. While such development may follow many pathways, the following is more or less characteristic of that which has taken place in the evolution of the treatment of cholecystitis. Often certain symptoms are noted to occur concomitantly, and after a period of time these are found to be associated with definite morbid anatomical aberrations. If this association is found to be present consistently in an adequate number of instances, a definite clinical syndrome becomes established. This becomes effected by virtue of statistical association and, likewise, the accuracy is determined by virtue of the pertinency of this association.

If the etiologic factor or factors are not readily apparent, therapeutic procedures often are instituted, being based either on the nature of the symptoms or the pathologic findings or both. Again, the effectiveness of these therapeutic procedures becomes a function of statistical association with amelioration of the symptoms or the underlying lesion. By virtue of the effectiveness of the results obtained, the particular therapeutic procedure becomes an established treatment or is thrown into discard.

Many students of logic would find much to criticise in such an approach at the solution of a problem. However, when a patient is in great distress or his physician is frantically seeking out something that will give relief, systems of logic often are referred to the halls of academic scholasticism. Relief of pain in its bald simplicity is more to be desired than the perfection of pure reason.

Yet, in moments of calm, it may be well for us to consider critically some of the established therapeutic procedures, particularly when some of these procedures are not always associated with complete relief of symptoms.

The operation of cholecystectomy in the treatment of the symptoms of cholecystitis now has become a well-established therapeutic procedure. By and large, the results are most satisfactory. Occasionally, however, one may encounter a patient who has a persistence of these symptoms for which such treatment has been instituted, either in their entirety or with some amelioration. In order to understand why this is so, it probably would be advantageous for us to review some of the underlying factors involved in the production of the complaints related to the pathologic processes seen in cholecystitis.

The symptoms generally complained of in cholecystitis are basically those of pain and dyspepsia. The extent and the intensity of these symptoms, however, may vary within wide limits. The digestive disturbances may consist mainly of a fullness after meals, associated with gaseous eructations and bloating, particularly after specific foods. As the symptoms become more severe, nausea and even vomiting may intervene. The digestive disturbances are suggestive of altered gastric motility with an inability of the stomach to empty itself adequately, particularly of swallowed air. As a rule, however, there is no roentgenologic evidence of pyloric obstruction present in such situations.

The pain also varies in degree. It may consist of subcostal soreness, which is aggravated on pressure and sudden motion, to intense excruciating colic. The usual picture is a combination of the two, although episodes of colic may occur in individuals totally lacking in interval symptoms. The colicky pain is located in the region of the gall bladder, although it often is referred to the region of the right shoulder blade. These colicky attacks often are sudden in onset and may last for a few minutes to a few hours. At other times they may persist for a longer period and, as a rule, when they do the gall bladder becomes tender and palpable and generally is associated with evidence of inflammation at such a time. Digestive disturbances become more marked, and there is seen, not infrequently, fever and leukocytosis. As a general rule, the clinical picture seen in biliary colic is the result of smooth muscle spasm or tension, either in the gall bladder or the cystic and common bile ducts. Such spasm

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or tension also generally is associated with the presence of a stone. It seems hardly likely then that gall-bladder colic should be considered as being due to the passage of a stone, for, indeed, the picture can be reproduced easily by sudden distention of the gall bladder or the common bile duct without the presence of stone.

Considered in the above light, then, the picture of cholecystitis is best not divided into various categories such as chronic, subacute, and acute. We see it here as a continuum. Whether or not the clinical picture seen in chronic cholecystitis will be associated with exacerbations of biliary colic, depends, as a general rule, upon the presence or absence of spasm of the gall bladder or cystic duct. Whether or not the picture of biliary colic will be carried on into that of acute cholecystitis will depend upon the extent and length of time in which obstruction of the cystic duct is present as well as upon the type of bile distal to the obstruction. Thus, the inflammatory picture in cholecystitis may be mild or may be severe, just as the symptoms may be slight or severe. Fundamentally, however, we are dealing with a single disease process.

Since the days of antiquity, at least some of the symptoms which we have described above have been associated with stones in the gall bladder. The frequency of this association was enough to attach to it statistical significance. It therefore was natural to give the association pertinency and to reason that if the stones were removed the symptoms would be relieved. When laparotomies became safe enough to make them elective procedures, it was natural for the operations of cholecystotomy or cholecystostomy to be developed, and toward the end of the last century the removal of stones with drainage of the gall bladder was being performed by many surgeons. The fact that many people had stones in the gall bladder without symptoms was passed over without serious consideration. Likewise, the fact that a patient could have gall-bladder symptoms with a damaged stoneless gall bladder also was ignored. It was not until the clinical results of a large number of such operations were studied that it was found that this apparently logical procedure was not the procedure of choice. It was settled statistically.

Shortly after the first cholecystostomy was performed, the gall bladder was removed by Langenbeck, and the operation of cholecystectomy, therefore, appeared upon the scene. You here in the Twin Cities may well be proud of the fact that the first cholecystectomy performed in this country was done at St. Joseph's Hospital in Saint Paul by Dr. Justus Ohage, the father of one of the members of this surgical society. As time has elapsed and experience has been evaluated, this procedure now, in the great majority of instances, has replaced the operation of cholecystostomy. We thus have reasoned, and again statistically, that it apparently is the gall bladder wall that is responsible for the symptoms under treatment.

In a small number of instances, however, ranging from 5 to 15 per cent, there are people with the classical picture of cholecystitis who, when the gall bladder has been removed, will note that a few or all of their symptoms persist. What shall be our explanation for this, and how shall they be taken care of? It is in an effort to answer this question that it would seem wise for us to examine again this symptomatology and try, if possible, to elicit the cause of the symptoms of cholecystitis in the beginning and why these symptoms are alleviated when the gall bladder is removed.

When we attempt to explain the symptom of pain in the viscera of the upper right abdomen, we find that this is mediated almost entirely through the sympathetic nervous system. Occasionally, one will encounter fibers from the phrenic nerve on the right side that enter into the region of the biliary tract, but these, as a rule, are few in number and posteriorly located. If one stimulates these sympathetic fibers directly, pain is reproduced. If one stimulates these fibers by sudden distention of the gall bladder or sudden distention of the common bile duct, pain is reproduced. If the nerves are sectioned proximal to these areas and these maneuvers repeated, there is no pain. If the greater and lesser splanchnic trunks are sectioned on the right side, pain is not reproduced except in rare instances in which it may be necessary to section some of the fibers on the left side. We may make the statement then, I think, that the sensation of pain as related to biliary tract disease, except where the parietal peritoneum is involved, is a function of the sympathetic nervous system.

Let us now consider the symptoms relating to

dyspepsia and, in particular, how they concern the vagus nerves. The clinical observations of Kocher on cord injuries showed as early as 1896 that the vagi have no pain-carrying fibers from the abdomen (de Takats[2]). Vagal fibers, however, are concerned in the control of gastrointestinal motility. If either the right or the left vagal nerves are stimulated in the neck of a dog, one notes marked contraction of the duodenum with increase in tension within the lumen of the abdomen. If pressures within the lumen of the gall bladder and within the common duct are determined, there also is noted a considerable rise in intracystic and intraductal pressures. When tension within the gall bladder and common bile duct occurs, one should anticipate other evidence of vagal stimulation. Such has been found to be the case in observations on animals made by Schrager and Ivy[8] and by Davis, Hart and Crain,[1] and in the human by McGowan, Butsch and Walters[5] and by others. Besides the pain produced by such a procedure, which would be mediated through the sympathetic system, these observers also noted that there was salivation of the animal, followed by nausea and vomiting. The secretion of saliva, as is well known, is to a considerable extent dependent upon vagal stimulation.

The process of vomiting, however, is a complicated one, and to think of it purely in terms of increased tone around the antral and pyloric portions of the stomach probably is oversimplification to the point of inaccuracy. That such increase in tone, however, may interfere with normal emptying of the stomach is highly probable, and this can be shown to occur with mild vagal stimulation. It thus would be safe to state that severe vagal stimulation can be made to initiate the complicated muscular co-ordination which results in vomiting, although it is quite obvious that vomiting also may be produced through other mechanisms. Where the stimulus is not so great or where the threshold of stimulation of the nerve supply is only slightly lowered, one may anticipate less dramatic effects of such stimulation, which would show itself in abnormal emptying of the stomach, chiefly insofar as swallowed air is concerned.

Both clinical and experimental evidence seem to point to the fact that the symptoms generally encountered in cholecystitis, be they mild or severe, can be explained on the basis of nervous impulses passing through the sympathetic and parasympathetic nervous systems.

Our next problem is to determine whether or not there is an adequate distribution of these fibers along the course of the bile ducts and the gall bladder to participate in such a function as we have described above.

Many studies have been made on the course and distribution of vagal fibers to the stomach and biliary passages. One of the very good studies was that by Swan as early as 1834, and during the ensuing years numerous other studies relating to gross dissection have been described. There is considerable disagreement, particularly as related to the details of distribution of the smaller fibers, and we therefore must conclude that there is much individual variation in the human. It seems now to be fairly well established that as the vagi enter the abdomen both nerves supply fibers to anterior and posterior trunks. These anterior and posterior trunks may form actual plexuses. The main gastric branches of the anterior trunk generally course along the lesser curvature of the stomach and supply the anterior surface of the stomach as far as the pyloric antrum. It is questionable whether the pyloric canal and sphincter receive branches from this anterior plexus. The anterior trunk gives off branches to the liver, however, and as these branches cross the lesser omentum, they apparently, at times, communicate with sympathetic fibers. The posterior vagal trunk apparently sends fibers to the pyloric sphincter and the pyloric canal along with the upper portion of the duodenum.

The posterior trunk also may be traced to the liver, the pancreas and celiac plexus. Its hepatic branch passes to the liver through the gastrohepatic ligament where it is joined by a branch apparently from the anterior plexus. These fibers here, and also as they pass through the celiac ganglia, become incorporated in the same trunk with the sympathetic supply. It is questionable whether true synapses occur in the celiac ganglia, insofar as vagal fibers are concerned.

The majority of the nerve fibers which are distributed to the biliary tree are derived from the sympathetic system and reach the liver by way of the celiac plexus (Kuntz[3]). These fibers are derived from the greater splanchnic nerves which have their origin predominantly from the T6-T9 sympathetic ganglia, and the lesser splanchnics

which arise from the T10-T12 sympathetic ganglia.

In the final distributions of the sympathetic plexuses, one again encounters considerable dis-

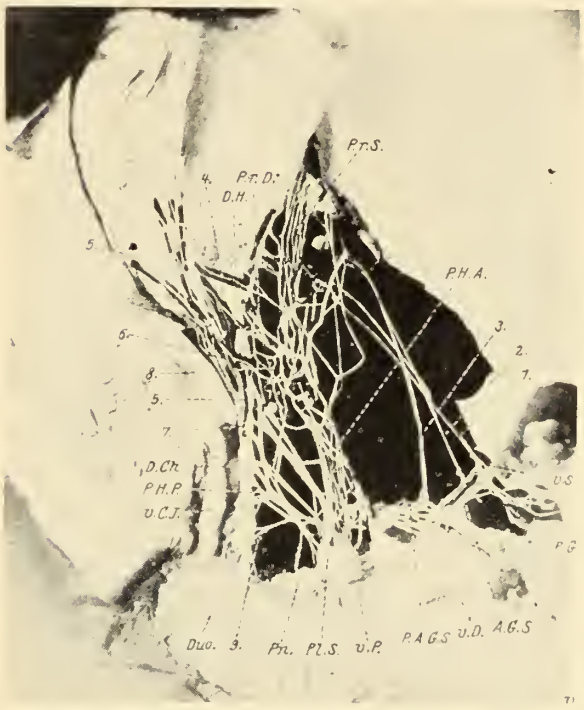


Fig. 1. Dissection of nerve supply to gall bladder and bile ducts (after Raigorodsky).

agreement in anatomical dissections. In our experience, the studies of Raigorodsky[7] have, for the most part, held true. He divided the fibers which enter the liver and biliary passages from the celiac plexus into anterior and posterior divisions. The anterior hepatic plexus usually follows the hepatic artery, the pathway changing as the path of the artery varies. The posterior hepatic plexus, with its nerves, passes to the right and superiorly in the portal area, where it first is seen behind the lower third of the portal vein and crosses over on the under surface. It then is found lying in the outer groove between the right periphery of the portal vein and the common bile duct, where it sends filaments to the bile ducts and gall bladder, finally passing to the liver, which it enters in the region of the end-branches of the right hepatic artery. Along the course of the right hepatic artery it anastomoses with ramifications of the anterior hepatic plexus. An illustration of one of the dissections by Raigorodsky is shown (Fig. 1).

It is worth while to call attention to two of the main nerves supplying the gall bladder which are of considerable clinical interest. The medial nerve arises from the anterior plexus, passes over the anterior surface of the common hepatic ducts, and anastomoses with the posterior hepatic plexus in the triangle of the cystic and hepatic ducts and passes through the medial superior surface of the gall bladder. It often is seen running close to the cystic artery and can be very easily incorporated in the ligature which is placed around the cystic artery during cholecystectomy.

The lateral nerve of the gall bladder arises from the posterior plexus and passes along the lateral surface of the gall bladder and during its course comes relatively close to the cystic duct. It also can be easily incorporated along with the cystic duct in a ligature during cholecystectomy. While there are numerous other smaller fibers reaching the gall bladder and common bile duct, one cannot help being impressed with the size of these two nerves described above.

Latarget[4] has described what is termed the pancreaticocholedochus nerve which is derived from the posterior hepatic plexus and which passes distally to the retroduodenal and intraduodenal portions of the common bile duct. As can be readily seen, this nerve also is of considerable clinical importance.

The common bile duct is surrounded by a plexus of delicate nerve fibers throughout most of its extent. This plexus has connecting branches between the anterior and posterior hepatic plexuses. The posterior surfaces of the cystic, hepatic, and common bile ducts are in close proximity to the posterior hepatic plexus, which contains many large nerve fibers.

Having demonstrated that many of the symptoms seen in cholecystitis can be produced by stimulation of the sympathetic and parasympathetic nerve supply to this region, and having shown that there is an adequate distribution of such nerves to the gall bladder and bile ducts, our next problem comes as a demonstration of a mechanism for the production of such stimulation. In elucidating this mechanism, I shall refer briefly to a contribution of several years ago.[9]

There are numerous ways in which a nerve may be stimulated. So far as the viscera with which we are concerned are affected, stimulation by stretching, ischemia or inflammation plays the most important part. Often there is a

combination of two or three of these factors at the same time. Observation of these phenomena are commonplace in the experience of most surgeons. The production of pain by the stretching of visceral nerves is a frequent observation clinically when the mesentery is pulled upon during an operation under local anesthesia. It also is noted during the spasm of smooth muscles. Here also ischemia plays a part. One sees the fact of ischemia at play as a result of an embolus to an important artery, but here again the formation of acid bodies in the tissues following ischemia might be instrumental also in the production of nervous stimulation. That this actually does take place in the case of lactic acid has been demonstrated by Moore.[6]

Besides lactic acid, another potential chemical stimulant in inflammatory areas is potassium, which is liberated in areas where there is considerable cellular breakdown. It will be readily recalled that in the acute phase of cholecystitis the inflammatory picture is one of necrobiosis. This is associated with considerable increase in capillary permeability, with ensuing edema. Where the process is severe, there may be focal areas of necrosis, not only involving the mucosa but also the wall of the gall bladder. These permeability changes may be so great that there will be a transudation of red blood cells throughout the wall of the gall bladder. In such situations the stimulation of the nerve supply will most likely consist of tension from the edema, upon which is superimposed the chemical stimulation resulting from cellular breakdown.

As the process ages and the edema subsides, there occurs a massive dense collagenous fibroplasia throughout the gall-bladder wall. A constant stretching and ischemia follows this proliferation, with an ensuing lowered threshold of stimulation along the nerve fibers and at the nerve endings. While inflammation is still present, as can be seen evidenced by the accumulation of lymphocytes around such nerve trunks, this scarring probably is the most important factor in the so-called chronic stage of cholecystitis.

We have called attention to the fact in previous publications that this considerable desmoplasia is typical of that seen following injury from the cholesterol and cholic acid derivatives found in bile. Indeed, in one study by Haffner and myself,[10] we were able to demonstrate microscopic evidence of some of the components of bile in gall-bladder walls in routine sections in approximately one-third of the instances of chronic cholecystitis.

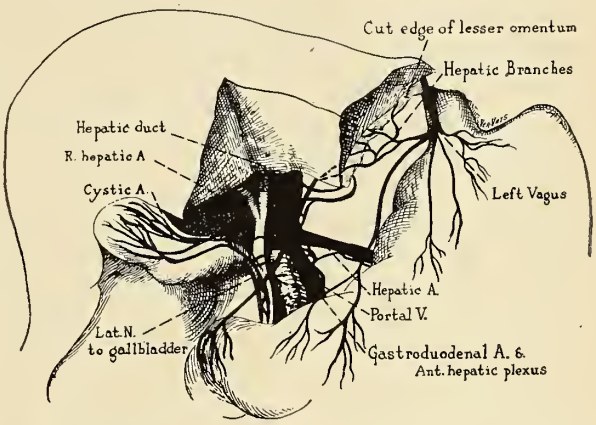


Fig. 2. Diagrammatic representation of nerve supply to gall bladder and bile ducts as often seen in our experience.

Thus, we see that there is present in the gall-bladder wall adequate means of producing a markedly lowered threshold of stimulation of the nerve supply. This will explain why in such damaged viscera stimuli that ordinarily would not be noted now produce symptoms. This can be simply illustrated by the observation that the normal gall bladder is not tender to pressure, whereas the damaged gall bladder, even in the fibrotic state, is tender on deep pressure.

When we consider, therefore, that the symptoms in cholecystitis are related to stimulation of the sympathetic and parasympathetic nerve supply, that this nerve supply is abundant in the gall-bladder and biliary tract regions, and that there does exist a mechanism in the disease state in which these pathways can be stimulated, the rationale of cholecystectomy becomes obvious. In removal of the gall bladder we destroy a considerable number of these fibers. We remove fibers and nerve endings that are damaged, and wherever stones are present we remove a trigger point, so to speak, of stimulation. When so considered, the operation of cholecystectomy in many of its aspects is essentially that of peripheral neurectomy.

If the gall-bladder wall is not involved in inflammation and scar, even though stones are present in the gall bladder, they often will not produce symptoms because the threshold of stimulation of the nerve supply has not been lowered. The

only exception to this is when such a stone obstructs the cystic duct. In a similar manner, we now can understand why a stoneless gall bladder may at times produce symptoms. This approach also sheds light on why certain patients will have a persistence of part or all of their preoperative symptoms, for if these nerve trunks become involved in scar around the cystic artery or cystic duct and are held tense over the common bile duct, changes in intraductal tension will serve as a method of stimulation.

When such consideration is given, it becomes obvious that the technique of cholecystectomy must carry with it the destruction of the nerve supply to the gall bladder. This means that the cystic artery and cystic duct must be stripped clean before ligation. It also means that, wherever possible and safe, the nerve supply mesial to the common bile duct should be interrupted. The extent to which we carry out this type of careful dissection often will determine the completeness of the curability of our therapeutic procedure.

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COMMON FORMS OF RESPIRATORY ALLERGY

(Continued from Page 708)

confessing his disturbing impulses, and his asthmatic attacks recur when he is unable to unburden himself of his conflicts by confession. Psychotherapy gives the patient an opportunity to confess whatever is disturbing him. Sometimes he will remain free from attacks for a considerable length of time until some new disturbing impulse arises. It does not require a psychiatrist always to aid these people, and even the family physician who understands his patient may be able to discover the particular matters that are disturbing the patient at the time of his attacks, get him to confess them, and when relief is obtained, reassure his patient until another attack occurs. Winning the patient's confidence and talking over his problems freely do much to help many asthmatics.

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PERIARTERITIS NODOSA (ESSENTIAL POLYARTERITIS)

Clinical Data on Thirty Cases Proved at Necropsy

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STARTING with Kussmaul and Maier's case of periarteritis nodosa reported in 1866, numerous single case reports of this disease have been published in the medical journals of the United States and foreign countries. The average reader may be somewhat confused by these descriptions of isolated cases because the clinical manifestations in periarteritis nodosa are both numerous and highly variable.

In 1936, Spiegel reported on seventeen cases of periarteritis nodosa. In his group, abdominal pain not adequately explained by the involvement of any single organ was the most prominent presenting symptom. Five of his seventeen patients had had operations for "acute appendicitis." Two additional patients had had exploratory abdominal operations, and an eighth patient had had a ruptured duodenal ulcer. Spiegel was impressed by the combination of abdominal pain with apparently irrelevant symptoms of arthritis, neuritis, nephritis or cardiac failure. Such a combination of signs or symptoms, he felt, should make one suspicious of periarteritis nodosa.

Harris and co-workers, in 1939, reviewed the records of eighty-seven cases of periarteritis nodosa in which necropsy was performed. He noted the widespread involvement, and described the occurrence of the lesions in the following organs with the indicated frequency: kidneys, 87 per cent; heart, 84 per cent; liver, 71 per cent; spleen, 31 per cent, and lungs, 25 per cent.

In a series of articles on periarteritis nodosa written from 1938 to 1944, Boyd[1-7] discussed the various clinical manifestations of the disease under the following headings: cutaneous symptoms, neuromyositic manifestations, abdominal manifestations, renal and cardiac manifestations, cerebral and ocular manifestations and pulmonary manifestations. Jones reviewed records of fourteen pathologically proved cases of periarteritis nodosa in 460,000 admissions to the University Hospital of the University of Michigan in 1942. Diaz-Rivera and Miller reported on seven similarly proved cases in 1946. These authors emphasized the varied clinical picture. The ultimate criterion for the diagnosis is still the histopathologic finding of typical and characteristic lesions.

Rich,[13-16] and Rich and Gregory, on the basis of animal experiments and observations on cases of human periarteritis nodosa, felt that at least some cases of the disease resulted from hypersensitivity and were actually allergic vascular reactions. They felt that sensitivity to sulfonamides and other drugs and serum sickness were etiologic factors. Zeek, Smith and Weeter produced lesions in rats which were very similar to those seen in human periarteritis nodosa by removing one kidney and producing perinephritis of the other kidney by wrapping it in silk. Hypertension also developed. They considered that human periarteritis nodosa and human hypersensitivity angiitis are two types of necrotizing panarteritis whose pathogenesis is different and which can be distinguished by careful pathologic studies. It is quite possible that there may be multiple etiologic factors in the entity described as periarteritis nodosa and that we are not dealing with one rare disease but with a group of even rarer diseases.

The Present Study

This paper is based on an analysis of data on thirty patients who were studied during life at the Mayo Clinic and who subsequently died, and in whom the diagnosis of periarteritis nodosa was made or confirmed at necropsy. We have studied the clinical features encountered in these thirty cases in some detail.

Age, Sex and Occupation.—The average age of the patients at the time of death was 43.4 years. The youngest patient, a female child, died at the age of three and one-half years. The oldest patient was seventy-one years old when he died. Two-thirds of the patients were more than forty years old (Table I). There were twenty-seven males and three females. Three of the thirty patients were physicians and a fourth patient was a dentist; otherwise, the occupational representation was not significant.

This paper was written while Dr. Wold was a Fellow in Medicine, Mayo Foundation. Dr. Barker is Chief of a Section in Medicine, Mayo Clinic, Rochester, Minnesota.

TABLE I. DISTRIBUTION OF THIRTY PATIENTS WITH PERIARTERITIS NODOSA ACCORDING TO AGE AT TIME OF DEATH

Age in Years	Patients
0-9	1
10-19	2
20-29	3
30-39	4
40-49	8
50-59	3
60-69	8
70-79	1

Duration.—The duration of symptoms was calculated from the date of onset of a presenting symptom or group of symptoms which probably were due to periarteritis nodosa (Table II). It is noteworthy that the majority of patients had symptoms referable to the disease of less than six months' duration. Only four patients (13 per cent) had had symptoms for one year or more.

Allergy.—Only three (10 per cent) of our patients gave a definite history of asthma. One patient gave a history of vasomotor rhinitis.

Sulfonamide Therapy.—Eleven patients (37 per cent) had received sulfonamide therapy just prior to registration at the clinic or were treated with one of the sulfonamides during the time they were being studied. It is possible that more of the patients had received the drug, without knowing its nature, as part of their treatment at home before coming to the clinic. One of the patients had received abundant topical applications of sulfonamides for the treatment of a severe burn involving 50 per cent of his body area four months prior to admission. Another patient had a fever two weeks prior to his death which was thought to be due to sulfadiazine which he was receiving intravenously at the time. Administration of the drug was discontinued. Sulfadiazine was started orally two days prior to his death. In another instance a patient had received sulfonamide therapy for a sore throat four weeks prior to admission. The patient's sister had received the same drug for a similar condition at the same time. "Bright's disease" developed in the sister. Our patient died seven weeks later with periarteritis nodosa. Five patients received sulfonamides during the terminal state of their illnesses at the clinic. Three patients gave a history of having received one of the sulfonamides within six months prior to the date of their registration at the clinic.

TABLE II. DURATION OF SYMPTOMS OF THIRTY PATIENTS WITH PERIARTERITIS NODOSA

Duration	Cases	
	Number	Per Cent
Less than six months	18	60
Less than one year	26	87
One year or more	4	13

TABLE III. ORGANS OR SYSTEMS WITH WHICH CLINICAL MANIFESTATIONS WERE ASSOCIATED

Organ or System	Cases	
	Number	Per Cent
Gastrointestinal organs	23	77
Peripheral nerves	22	73
Kidneys	21	70
Heart	17	57
Central nervous system	14	47
Lungs	14	47
Skin and subcutaneous tissue	13	43
Skeletal muscles	12	40

Clinical Manifestations.—A great variety of clinical symptoms and signs was noted in the different patients. Fever was common and occurred in twenty-one patients (70 per cent). Twenty of the patients (67 per cent) had hypertension as indicated by a blood pressure that was greater than 150 mm. of mercury systolic and 90 mm. diastolic. Frequently the hypertension developed during the time that the patient was being observed for his illness. Data as to the involvement of the various organs or systems are summarized in Table III.

Twenty-three of the thirty patients (77 per cent) had gastrointestinal symptoms, of which abdominal pain was the most frequent. Vomiting, abdominal distention, melena, nausea, hematemesis and jaundice occurred less frequently.

Renal involvement was interpreted to exist when the blood urea measured in excess of 60 mg. per 100 c.c. or when significant albuminuria and urinary casts were present. In fifteen cases (50 per cent), definite azotemia or uremia was encountered. In six additional cases (20 per cent) hematuria was noted.

In fourteen of the thirty cases, there were symptoms which were referable to the central nervous system. Hallucinations, disorientation, unresponsiveness, stupor and coma were noted. In eight of the patients presenting such symptoms there was no associated renal insufficiency or uremia.

Twenty-two of the thirty patients were found to have evidence of peripheral neuritis. This was manifested by muscular weakness, pain along the distribution of nerves, paralysis localized to regions supplied by specific nerves, paresthesias,

hyperesthesias and impaired or absent deep reflexes.

Twelve patients had evidence of myositis as indicated by local tender spots in skeletal muscles, but myositis did not occur without evidence of peripheral neuritis.

Seventeen patients had symptoms of cardiac failure. The cardiac symptoms most often encountered were dyspnea on exertion or while at rest, cyanosis, peripheral edema and ascites.

Fourteen had pulmonary symptoms. Cough was the most often noted, along with pain in the chest and hemoptysis. Three patients had asthma. One patient died of respiratory failure.

Nineteen patients had anemia, as indicated by a hemoglobin determination which was less than 10 gm. per 100 c.c. of blood or an erythrocyte count that was less than 3,500,000 per cubic millimeter of blood. Occasionally, the anemia was severe, but when the value for hemoglobin was less than 4 gm. per 100 c.c., gastrointestinal hemorrhage had occurred previously. Leukocytosis was noted in 80 per cent of the cases, as indicated by a leukocyte count in excess of 10,000 per cubic millimeter of blood. Usually, the leukocyte count ran between 10,000 and 25,000, although in one patient a count of 46,600 was noted. In five cases (17 per cent), eosinophilia was noted. In three of these five instances there was a definite history of asthma, and in these three cases the eosinophils constituted 29 to 73 per cent of the leukocytes; in the fourth patient, who was without a history of any allergic manifestations, 14 per cent of the leukocytes were eosinophils; and in the fifth patient, who had vasomotor rhinitis, the eosinophils made up 20 per cent of the leukocytes, according to counts made elsewhere prior to admission. The eosinophil count was normal during the time the fifth patient was studied at the clinic.

In thirteen of the thirty patients the sedimentation rate of the erythrocytes was determined by the Westergren method. No values below 40 mm. in one hour were recorded, and there was only one value below 67. In four instances the value was more than 100. The average of the values for the thirteen patients was 90.

Thirteen of the thirty patients had lesions of the skin or subcutaneous tissue; however, an analysis of the dermatologic conditions presented shows that in several cases the lesions encountered were probably unrelated to the disease. One patient had hyperkeratotic lesions of the skin. A second patient had a dermatitis of the hands following exposure to formaldehyde. A third patient had a draining sinus, and Actinomyces were found in the purulent drainage. We feel that these dermatologic conditions were probably unrelated to the periarteritis nodosa. Only four patients had subcutaneous nodules. In one instance a few scattered discrete nodules were found. In another, tender nodules were found over the course of a brachial artery. In a third, there were small, subcutaneous nodules in the region of the left biceps. In a fourth, the nodules were palpated over the elbow. In each instance in which nodules were observed, one was removed for biopsy.

Purpuric or hemorrhagic areas in the skin were more common than were subcutaneous nodules. The purpuric spots were observed in six patients (20 per cent of thirty cases). In one patient, discrete red spots 1 cm. in diameter or less were found on the lower extremities in association with subcutaneous nodules along the course of a brachial artery. A second patient had discrete red areas measuring 0.1 to 1.0 cm. in diameter and distributed generally over his body. Some of the areas were ulcerated and some had fluctuant centers. Purpuric spots and infarctions of the skin were noted in two patients. In another patient small petechial hemorrhages and abscesses developed over the dorsal surface of the wrist during the terminal stages of the illness.

Biopsy.—Biopsy had been done in eleven of the thirty cases. In one instance the specimen was from the liver, and in one a kidney was removed, but in neither of these were lesions of periarteritis nodosa found. Subsequently, re-examination of the kidney did show such lesions. In the other nine cases the specimen was from skeletal muscle, skin or both, at the site of a nodule, skin lesion or painful spot. In two cases periarteritis nodosa was diagnosed from biopsy. In one there was mild periangiitis and in one there was marked thickening of arterial walls without periarteritis or necrosis of the medial coat. In two cases the picture was that of dermatomyositis. In the other three cases no diagnosis could be made from the biopsy specimen.

Clinical Diagnosis.—A decade ago the antemortem diagnosis of periarteritis nodosa was rare-

TABLE IV. CLINICAL DIAGNOSIS IN THIRTY CASES OF PERIARTERITIS NODOSA FOUND AT NECROPSY

Case	Year	Clinical Diagnosis
1	1926	Multiple neuritis. Lead poisoning.
2	1931	Hypertension. Chronic glomerulonephritis. Hepatic or subphrenic abscess.
3	1936	Malignant hypertension. Acute retinitis with detachment of both retinas. Myocardial degeneration with congestive heart failure. Renal insufficiency. Pericarditis.
4	1937	Respiratory paralysis.
5	1938	Obscure fever. Cardiac neurosis.
6	1939	Indeterminate. Dermatomyositis. Osteomyelitis. Peritonitis.
7	1940	Indeterminate.
8	1940	Periarteritis nodosa.
9	1942	Cerebral vascular accident. Thrombosis of basilar artery with infarction of pons.
10	1942	Acute glomerulonephritis. Dermatomyositis. Neuronitis.
11	1942	Chronic glomerulonephritis. Malignant hypertension.
12	1942	Periarteritis nodosa.
13	1942	Periarteritis nodosa.
14	1943	Periarteritis nodosa.
15	1943	Indeterminate. Periarteritis nodosa.
16	1944	Indeterminate. Brain abscess? Nephritis?
17	1944	Pneumonia. Cardiac failure. Anemia.
18	1944	Septicemia. Miliary tuberculosis. Brain abscess?
19	1945	Systemic actinomycosis. Peripheral neuritis.
20	1945	Malignant hypertension.
21	1945	Massive gastrointestinal hemorrhage. Cause undetermined.
22	1945	Periarteritis nodosa.
23	1946	Periarteritis nodosa.
24	1946	Periarteritis nodosa. Lupus erythematosis? Coccidiomycoses? Leukemia?
25	1946	Periarteritis nodosa with multiple mesenteric thrombi and gangrene of bowel.
26	1946	Periarteritis nodosa.
27	1946	Malignant hypertension. Hypertensive heart disease. Congestive heart failure. Azotemia.
28	1947	Periarteritis nodosa.
29	1947	Malignant hypertension. Pulmonary embolism. Bronchopneumonia. Cerebral vascular accident.
30	1947	Malignant hypertension

ly made. The clinical diagnosis of the disease still may be very difficult because of the protean manifestations and the great variability in the location of the organs or systems involved.

In eleven of the thirty patients in our series (37 per cent), the diagnosis of periarteritis nodosa was made before death. Table IV gives the year of death and the clinical diagnosis which was made in all of the cases included in this series. It shows the increased frequency with which the correct clinical diagnosis has been made in recent years. It also indicates that an increasing number of cases of periarteritis nodosa have been found at necropsy since 1940.

In Case 25, the diagnosis was confirmed at the time of surgical exploration of the abdomen. Periarteritis nodosa was suspected prior to the operation which was performed because the pancreas was felt to be a possible source of severe abdominal pain. Infarction of loops of bowel was found and these loops were exteriorized. It was noted at operation that there were thrombi in many of the mesenteric vessels.

In four instances, the correct diagnosis was ventured on clinical evidence alone. No biopsy was done.

Comment

It is worthy of comment that the clinical diagnosis was made in only eleven of this series of thirty cases in which the diagnosis was established at necropsy. In seven cases the clinical diagnosis of malignant hypertension or chronic glomerulonephritis was made. This suggests that periarteritis nodosa may commonly produce a clinical picture very similar to that seen in the terminal stages of malignant hypertension and chronic glomerulonephritis. It is known that a widespread necrotizing panarteritis may occur in the terminal stages of malignant hypertension and glomerulonephritis, but the arterial lesions are not considered to be identical with those of periarteritis nodosa. It is also worthy of comment that the information obtained from biopsy in the eleven cases in which it was done was for the most part disappointing and in several instances confusing. A positive result on biopsy is generally regarded as the best diagnostic evidence, but a negative result does not exclude the diagnosis. Also it would appear that in periarteritis nodosa a muscle biopsy may occasionally show the picture of dermatomyositis, which in some instances may be a closely related disease. It has been our experience that the so-called blind muscle biopsy or biopsy of a skeletal muscle in a region where there is no pain, tenderness, nodule, or other evidence of lesion is almost never of value for demonstration of the vascular lesions. However, during the past seven years we have known of a number of cases in which necropsy was not done but in which the diagnosis of periarteritis nodosa was established by biopsy of a nodule or a painful or tender spot in muscle or a lesion of the skin. Some of these patients are still alive.

Analysis of the clinical data in our thirty cases re-emphasizes the protean clinical manifestations of the disease known as periarteritis nodosa and the previous observation that one or several organ systems of the body may be affected. The combination of protracted fever, anemia, gastrointestinal disturbances, renal disease, peripheral neuritis and muscle pains is very suggestive, but to have all those manifestations in one patient with periarteritis nodosa is not common. The outstanding manifestations may be in the skin or central nervous system.

It is worthy of comment that in the thirteen patients in our series for whom the sedimentation rate of the erythrocytes was determined, it was increased in all cases and quite rapid in almost all.

Only three (10 per cent) of our patients had a definite history of asthma. This compares with Rackemann and Greene's finding of nineteen cases of asthma in 229 cases of periarteritis nodosa (8.3 per cent). In addition to the three cases of asthma, there was one case of vasomotor rhinitis and one questionable instance of drug fever (sulfonamide) in our series. There was no instance of serum sickness in our thirty cases of periarteritis nodosa. Rich[15] found a few cases of periarteritis nodosa, which had been overlooked previously, by reviewing the data on all cases of serum sickness which were available to him. However, attempts by us to find periarteritis nodosa in cases of fatal serum sickness in the Section on Pathologic Anatomy of the clinic were unsuccessful.

Eosinophilia in our series occured infrequently; it was found in only five patients. In three of these there was also a history of long-standing asthma. This is consistent with Rackemann and Greene's finding of a high eosinophil count in twelve of nineteen cases (63 per cent) of periarteritis nodosa with asthma, and in only 15 per cent of cases of periarteritis without asthma.

Summary

The clinical findings in thirty cases in which a diagnosis of periarteritis nodosa was made at necropsy have been carefully reviewed. History or evidence of allergic reactions or drug sensitivity were infrequent. The symptoms and clinical findings were variable and involved different organ systems in various combinations. The gastrointestinal organs, kidneys and peripheral nerves were most frequently affected clinically. The sedimentation rate of the erythrocytes was significantly increased in all of the thirteen cases in which it was determined.

A clinical diagnosis of periarteritis nodosa was made in eleven of the thirty cases. In seven others the diagnosis was malignant hypertension or chronic glomerulonephritis.

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(Continued from Page 696)

techniques we can do much to reduce both the mortality and the complications of the acute case.

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INVASION OF BLOOD VESSELS BY SOFT TISSUE FIBROSARCOMA

Report of Three Cases

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FIBROSARCOMA represents the majority of the primary malignant lesions of the soft tissues of the extremities;[18] it occurred in 65.5 per cent of the 232 cases which we have studied at the Mayo Clinic.

The subcutaneous and intermuscular tissues were found to be the favorite sites for the development of this type of lesion.[7] Frequently it appears dense but sharply separated from the surrounding tissues, as its growth mainly by expansion and encapsulation is a characteristic feature. In some cases, however, an infiltrating growth may be found, with the tumor densely attached to the surrounding parts. Not infrequently, the lesion completely surrounds the blood vessels, nerve trunks and other important structures, incasing them within solid masses of tumor tissues.[5]

The clinical course of fibrosarcoma is progressive, and even after local excision of the mass, the tumor often recurs. On recurrence, the lesion is found to be well circumscribed and still encapsulated in the region of the original growth, but the lesions may also be multiple and scattered throughout the tissues at some distance from the site of operation.[12] Muscle appears to be a favorable soil for secondary invasion. With each recurrence, the disease involves more and more of the surrounding tissues, usually produces metastatic lesions and finally causes death from hemorrhage or emaciation. The duration of life after the onset of symptoms varies with the degree of malignancy and averages about five years.[3] The most frequent cause of death is metastasis to the lungs, and this may occur in patients in whom the grade of malignancy is relatively low. The very cellular hyperchromatic spindle-cell lesion, in particular, shows a tendency to metastasize to the lungs. The less frequent sites of metastasis are the skin and subcutaneous tissues, the regional lymph nodes, the muscles, the skull, the vertebrae and ribs, and the liver and brain. Although dissemination of metastatic sarcoma by the venous route is common enough, the actual observation of invasion by direct extension into a blood clot is rather rarely seen by the surgeon.

In the three cases which will be reported, the patients were operated on recently and the blood vessels were secondarily involved. The extension of malignant cells into the minute clot in Case 1 clearly demonstrates how metastasis may occur through blood vessels. Case 2 demonstrates extension of fibrosarcoma into several veins of the dorsum of the foot (Fig. 1), while Case 3 illustrates the formation of an aneurysm as a result of destruction of the wall of the femoral vein by fibrosarcoma.

Tumors of veins may be benign or malignant, primary or secondary. As to *benign tumors*, reference is made to four cases of benign myoma reported by Aufrecht, Böttcher, Schnijder and Cernezzi. Also, secondary myxomas and cartilaginous tumors occur, and the latter especially are not infrequently seen to invade blood vessels. Egdahl in 1921 reported a case of *primary malignant* intravascular tumor, probably spindle-cell sarcoma; this growth was entirely intravascular. A similar case is that reported by van Ree, in which the sarcoma originated in the intima of a vessel wall and simulated thrombosed varices. A thrombosed mass showing sarcomatous degeneration was reported on by Razzaboni in 1920. In the literature there are many reports of cases of carcinoma in which primary, but more usually secondary, masses formed by direct extension within veins. Other malignant tumors, such as chondrosarcomas, invade large blood vessels; examples are the cases of Warren and Ernst. Very rare are sarcomas originating from the vessel wall. Three cases of sarcoma originating from the wall of the aorta were reported by Brodowski, Miura and Auffermann.[1,6] Also, Tillmanns reported a case of angiosarcoma (?).

Davis' case of fibrosarcoma, in which extensive invasion of the cephalic vein had occurred, was the only one found reported in the literature. This lesion belonged to the group of desmoids, which are much less malignant than fascial fibrosarcoma, especially fascial fibrosarcoma of the thigh.

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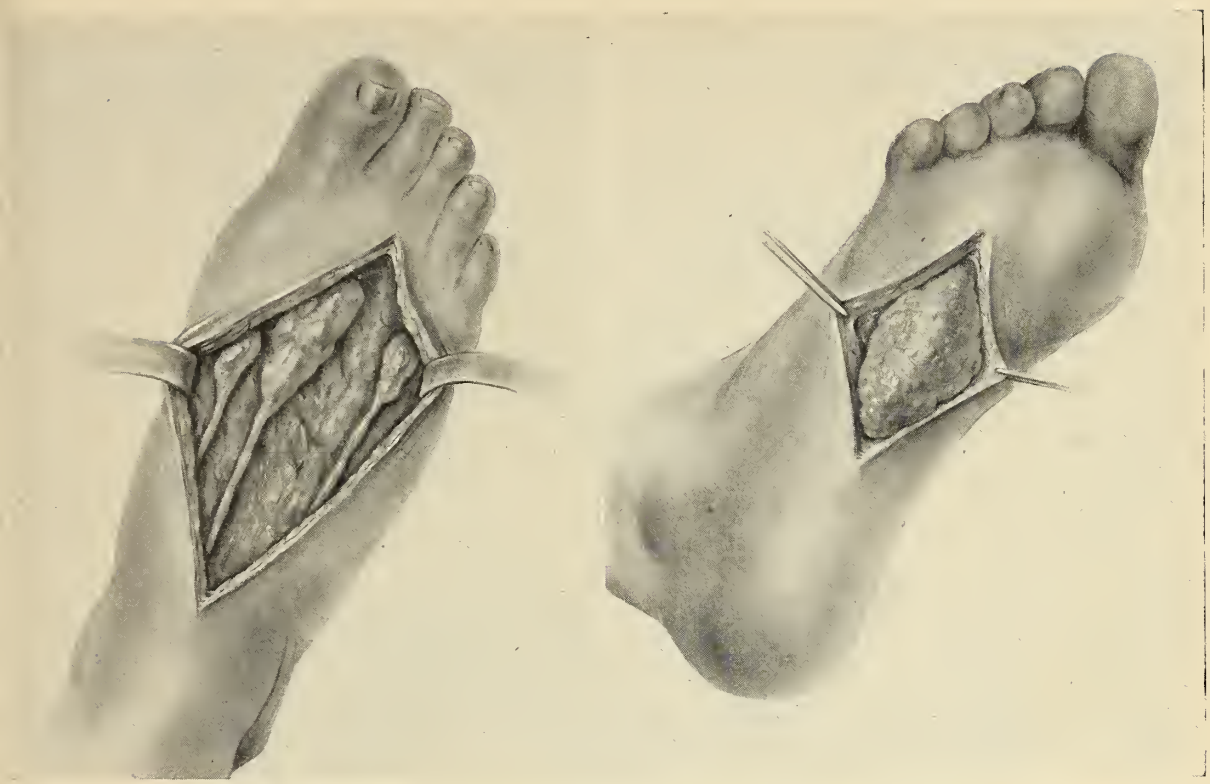


Fig. 1. Fibrosarcoma, grade 2, involving (*A*) the dorsal and (*B*) the plantar aspects of the foot with intravenous invasion.

Report of Cases

Case 1. Fibrosarcoma, Grade 3, of the Leg Showing Malignant Cells Growing in a Blood Clot of a Vein in a Patient with Diabetes.—A man sixty-two years of age was admitted at the clinic with a principal complaint of pain in the left foot and leg of five months' duration. He had first noticed, about five months prior to admission, numbness and tingling in the left foot at night, which disappeared in the daytime. This pain had continued to bother him. It was described as sharp and knifelike in character and was located in various parts of the left leg and foot. Concomitant with the pain, he had noticed swelling of the left foot which did not disappear with rest in bed. About a month prior to his admission the pain had become much worse; it had been present both night and day, and he had had occasional nocturnal cramps in the legs. Also, he had noticed some weakness in the left foot and inability to dorsiflex the left great toe; he was unable to wear his shoe on this foot, and the leg felt better when in a dependent position or when cool. Roentgenograms made early revealed no abnormality but later roentgenograms disclosed a soft tissue shadow between the tibia and fibula. He had had influenza and pneumonia followed by pleurisy in 1918, and he had suffered from a stone in the left kidney with hematuria in 1942. The family history was noncontributory. The patient had been married for forty-eight years and had four healthy children.

This patient had had diabetes mellitus for six years with a possible onset nine years prior to admission, as at that time he had had polyuria, polydipsia and loss of weight. He had lost 10 pounds (4.5 kg.) in the four months prior to admission. At the time of his examination at the clinic he was taking insulin daily. He appeared to be a well-developed and well-nourished man, who walked with a limp on the left. His height was 5 feet 8½ inches (174 cm.), and his weight was 181 pounds (82.1 kg.) without clothes. The blood pressure was 134 systolic and 70 diastolic, expressed in millimeters of mercury; the pulse rate was 84 beats per minute. The physical examination gave essentially negative results except for the extremities; edema of the left ankle and foot was graded 3, that of the right foot, grade 1. There was a firm mass, 6 by 3 inches (15.2 by 7.6 cm.) located along the lateral aspect of the middle third of the left tibia; it was not attached to the skin but was fixed to the deeper structures. The muscles of the calf were tender, the left foot was warmer than the right but no color changes were noticed. The pulsation of both posterior tibial arteries was normal, but neither dorsalis pedis artery could be felt. There was a noticeable weakness of dorsiflexion of the left foot, especially in the great toe. The left ankle jerk was absent.

The hemoglobin measured 16.6 gm. per 100 c.c. of blood, the erythrocytes numbered 4,600,000, and the leukocytes, 5,200 per cubic millimeter of blood. The result of the flocculation test for syphilis was negative. The value for blood sugar was 144 mg. per 100 c.c.

The sedimentation rate was 27 mm. in one hour by the Westergren method, and ten days later it was 67 mm. The results of urinalysis on two occasions were negative. The test for Bence Jones protein gave negative

liferation of bone at the medial and lateral aspects of the upper third of the shaft of the left tibia and vascular calcifications. The bone otherwise appeared to be normal. The anteroposterior and lateral roentgeno-

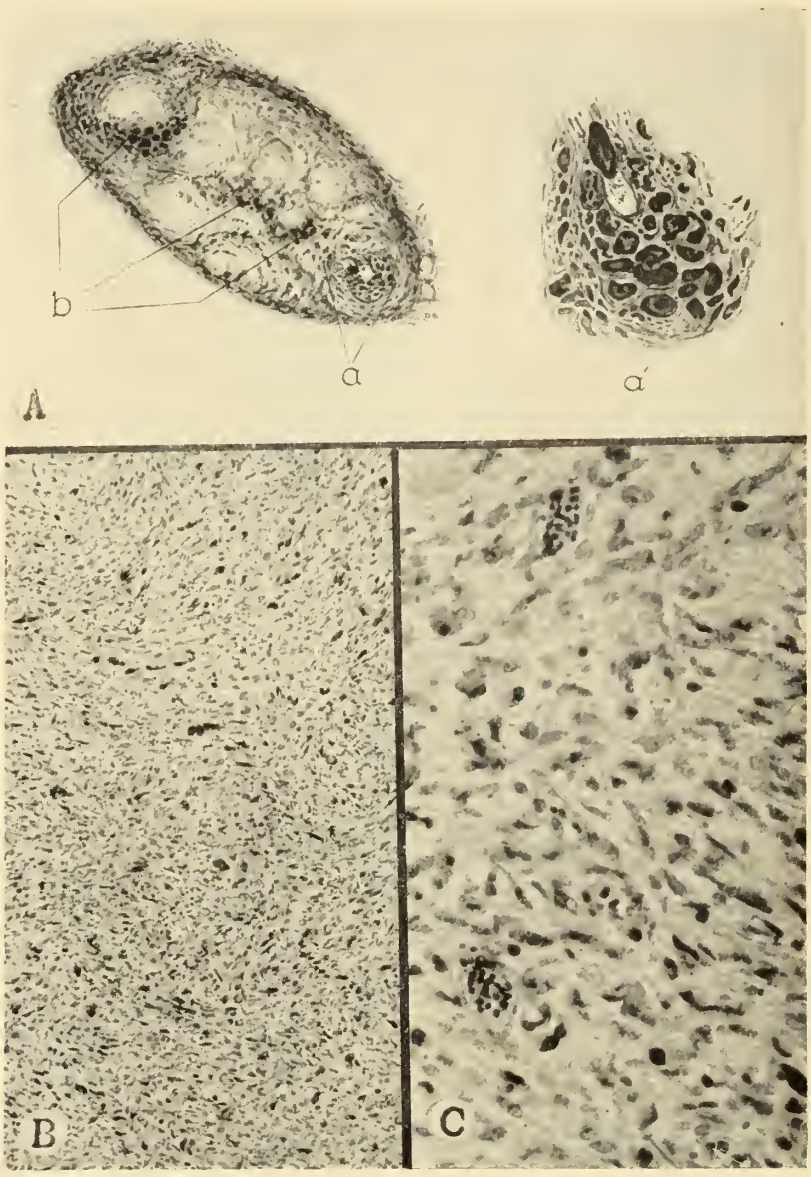


Fig. 2. (*A*) Blood vessel containing organized blood clot with nests of malignant cells which have grown by direct invasion: (*a'*) enlargement of *a*, showing malignant character of cells; (*b*) nests of malignant cells in organizing blood clot. (*B*) Fibrosarcoma, grade 3 (x 55). (*C*) Same (x 200).

results. The roentgenograms of the chest showed a rounded mass, 2 cm. in diameter, at the level of the sixth interspace posteriorly; it was felt that this possibly was the result of an inflammatory process but that the possibility of a malignant lesion, either primary or metastatic, should be excluded. There was minimal fibrosis at the level of the first anterior interspace on the right and calcification of the arch of the aorta. The roentgenograms of the left leg revealed slight periosteal programs of the lumbosacral region showed hypertrophic changes in the lumbar part of the spinal column. There was evidence of multiple small calculi just to the right of the body of the second lumbar vertebra and also multiple rounded areas of increased density in the pelvis.

At operation on November 22, 1946, through an incision 2 inches (5 cm.) in length a specimen was removed for microscopic examination by the fresh frozen tissue

method. The tumor was exposed and found to lie underneath the tibialis anticus muscle; it was grayish yellow in color and hard and it felt gritty. Microscopic examination revealed fibrosarcoma, grade 3, invading muscle and blood vessels which contained organized blood clots with nests of malignant cells (Fig. 2, *A*, *B* and *C*). The patient was informed of the malignant nature of the lesion and of the lesion in the lung, which probably was metastatic, although there was a possibility that the pulmonary lesion was of an inflammatory character. Surgical treatment was felt to be justified, and the patient decided to have an amputation.

On November 28, amputation at the juncture of the middle and lower thirds of the femur was performed with the patient under spinal anesthesia. The pathologic examination of the specimen revealed an infiltrating fibrosarcoma, grade 3, 10 by 7 by 7 cm., deep in the soft tissue of the leg with involvement of the periosteum of both the tibia and fibula, the interosseous membrane and the anterior muscles of the leg. The tumor had invaded several blood vessels and had produced a metastatic nodule, 1.5 cm. in diameter, which was attached to the popliteal vein. The patient was given dicumarol postoperatively, and he had an uneventful convalescence. He was dismissed on December 12, 1946. He reported by letter, July, 1947, that three months after he had returned home he had had pleurisy. The physician reported that death had occurred about eight months subsequent to operation as a result of pulmonary metastasis.

Case 2. Fibrosarcoma, Grade 2, of the Foot with Malignant Extension into Blood Vessels.—A patient forty-six years of age first noticed a painless swelling over the instep of his right foot in January, 1946, and remained under the observation of physicians until May 31, 1946, at which time biopsy and microscopic examination of tissue removed revealed fibrosarcoma. The roentgenograms of the chest at that time disclosed no abnormality. The patient had had a "sensitive feeling" in the ball of the right foot in 1941, but nothing abnormal had been found on examination; this sensation gradually had disappeared, there had been no trauma and he had served in the armed forces for six months without complaint. The father of this patient had died at the age of sixty-two years from hypertensive cardiovascular disease; the mother had died at the age of thirty-six years from a tumor of the brain; four sisters were living and well, but two brothers had died in infancy.

Examination at the clinic, June 10, 1946, revealed a firm swelling over the dorsum of the second and third metatarsal bones of the right foot with a small postoperative scar in this region; a separate mass, 1 cm. in diameter, could be palpated over the head of the fourth metatarsal bone. Hard pencil-like veins extended proximally from these tumors. There was a third mass on the plantar surface of the foot, which was larger than either of the two masses on the dorsum. The whole foot revealed diffuse edema and felt warmer than the left one. Sections of the tissue removed prior to his admission at the clinic and brought by the patient revealed fibrous hemangioma.

The examination further revealed essentially negative urinary findings, 14.4 gm. of hemoglobin and 5,800 leukocytes. The flocculation test for syphilis gave negative results. The sedimentation rate was 22 mm. in one hour by the Westergren method. The roentgenograms of the chest disclosed no abnormality, those of the right foot showed calcaneal spurs and there was no evidence of neoplasm of bone.

On June 11, 1946, excision of the tumors was performed with the patient under pentothal sodium anesthesia. The tumor of the dorsum of the foot consisted of two masses. The medial mass, 1½ by ¾ inch (3.8 by 1.9 cm.) in size, was intimately connected with the dorsalis pedis artery, which was thickened to about five times its normal size and the lumen of which contained friable tumor tissue. The artery was dissected upward until a level was reached at which it appeared normal, which was just below the ankle joint. The second mass on the lateral aspect of the dorsum of the foot, overlying the fourth metatarsal head, was ¾ inch (1.9 cm.) in diameter and there, too, a thickened vessel containing similar friable tumor tissue was found. This vessel was ligated 5 inches (12.7 cm.) proximal to the tumor and excised. Both tumors were removed. Tumor tissue was found to extend through the metatarsal bones to the plantar mass. As the tissue was very friable, a curet was required to scoop it out; this resulted in breaking it into several pieces, some of which were whitish and some whitish yellow or gray. The pathologist deferred diagnosis of the fresh frozen sections, but later, after a more detailed study, reported a degenerating and hyalinized fibrosarcoma, grade 2. The tumor had invaded large blood vessels and weighed about 30 gm. (Fig. 1).

The plantar tumor was extensive and it was obviously impossible to excise it completely. Amputation above the knee at the junction of the middle and lower thirds of the femur was performed June 14, 1946, with the patient under spinal anesthesia, and examination of the foot showed additional tumor tissue in the plantar region which we knew could not be successfully removed at the previous operation. There was no apparent extension of the tumor beyond the foot. The patient made an uneventful recovery. Roentgenograms of the thorax made in January, 1947, and in September, 1947, revealed no abnormality, and in January, 1948, the patient said he was well and had no trouble.

Case 3. Fibrosarcoma, Grade 4, of the Left Thigh.—A woman fifty-six years of age was seen in January, 1947, at which time she gave a history of sustaining a fall and landing on her buttocks in October, 1946. She stated that no roentgenograms had been made but that three weeks after this fall she had noticed a swelling on the inner aspect of the left thigh which became painful and that a diagnosis of thrombophlebitis had been made. The popliteal vessels had been prominent but there was no edema of the lower part of the leg. She stated that she had been treated with sitz baths and that her symptoms had subsided, but three weeks prior to admission at the clinic her symptoms had recurred.

Examination January 13, 1947, revealed an obese healthy-appearing woman, whose weight was 148 pounds (67.1 kg.) and whose blood pressure was 120 systolic and 80 diastolic. Palpation revealed a firm mass, 4 inches (10 cm.) in diameter and about 2 inches (5 cm.) deep, on the anteromedial aspect of the upper part of the left thigh, which appeared fixed to the bone or to the deep muscles.

The urinalysis gave negative results. The value for hemoglobin was 11.2 gm., the erythrocytes numbered 3,740,000 and the leukocytes, 5,400. The sedimentation rate was 49 mm. in one hour by the Westergren method. The roentgenograms of the left thigh showed a mass in the soft tissue involving the muscles of the anteromedial aspect of the middle third of the left thigh; the bone appeared to be normal.

At exploratory operation January 16, 1947, the mass was found to be bluish in color, and the femoral artery and vein were stretched so tightly across the anterolateral surface of the tumor that the artery was not pulsating. The femoral artery was then dissected out and reflected laterally, after which it was ligated above and below. The adductor brevis muscle seemed to end in the mass and was cut across after which it was possible to dissect down the fascial plane to the medial lip of the linea aspera and then to deliver the mass in toto. The femoral vein was found intimately bound with the tumor and apparently "was continuous with the inside of the saccular mass"; the artery appeared undamaged. A careful examination of the specimen was made, and the surgeon expressed the belief that the tumor had formed an aneurysm in the wall of the femoral vein. The lumen was filled with old, organized blood clots. The pathologist made a diagnosis of fibrosarcoma, grade 4.

The patient made an uneventful recovery after her operation and was given two deep roentgen ray treatments on the eighth and eleventh postoperative days. Examination on May 14, 1947, revealed no signs of recurrence or of metastasis to the lungs. She had gained weight, and the sedimentation rate was 40 mm. No further roentgen therapy was thought advisable at that time. In August, 1947, however, the patient's physician reported metastasis to the right lung, and death occurred on October 27, 1947.

Comment

We have previously stated that about 50 per cent of fibrosarcomas appear encapsulated and that the results of treatment are directly proportional to the degree of malignancy. The surviving patient in Case 2 had a grade 2 fibrosarcoma. We believe that better results will be obtained when the true nature of the tumor is diagnosed earlier. In the early stages of the disease, wide excision, or amputation if this is possible, is advisable. We have found these tumors very highly radioresistant, and it is our opinion that favorable results do not follow such treatment. Thus, the surgeon must determine the type and degree of malignancy and the operability of the lesion as indicated by its site and size; the duration and rapidity of recent growth are important factors to be considered. Furthermore, the treatment will be determined in part by whether or not there has been extensive invasion to important structures, that is, nerves and blood vessels. Roentgenographic examination of the thorax should be made in all cases to exclude the possibility of pulmonary metastasis. Amputation is often performed as a palliative measure because the patient may be suffering from intense pain resulting from a rapidly growing tumor that has failed to respond to other methods of treatment.

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MEDICAL PUBLICATIONS AND REPRINTS REQUESTED

Requests have been received from Japanese medical institutions for medical literature in the form of reprints particularly, but also medical journals and text books published since 1941. Literature on tuberculosis is especially desired. Physicians wishing to contribute may send such literature to Professor Quigley at the Department of Political Science, University of Minnesota, Minneapolis 14, Minnesota.

THE RELATION OF THE PATHOLOGIST TO THE GENERAL PRACTITIONER

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THE SUBJECT of this discussion seems extremely elementary at first glance. However, calm reflection demands that first, we define "pathologist" and "general practitioner"; second, that we review the relationship which exists at present between these two branches of the practice of medicine; and, third, that we speculate as to what can and should be done in the future in order that the two may be of greater service to each other and particularly to the patient.

Pathology is defined as the science of the origin, nature, and course of diseases. A pathologist is one who limits his practice to that of pathology. As such, he is a specialist in the practice of medicine. The so-called "clinical pathologist" has developed during the past quarter of a century. Salter,[1] an internist, has defined clinical pathology as "merely the adaptation of the fruits of fundamental research to concrete problems in medical practice." Sanford,[2] in his presidential address before the section on pathology and physiology of the American Medical Association in 1930, said, "A clinical pathologist is a physician who devotes all or the major portion of his time to diagnosis of disease by laboratory methods. He is a histopathologist and a microscopist. He must be a serologist, a bacteriologist, and somewhat of a chemist and physicist. In this field of varied interests he must always be up-to-date and must serve chiefly as a consultant in interpreting and evaluating laboratory data for his medical brethren." This is a large order, but it indicates the diversity of the clinical pathologist's interests today and suggests the extent of his usefulness in the practice of medicine.

Someone has said that a specialist is one who knows more and more about less and less. If the pathologist is a specialist, and generally he is so considered, the definition does not apply to him. During the past twenty-five years, the pathologist has emerged from the individual who too often was primarily interested in "deadhouse" pathology to a consulting specialist worthy of the name. He has become interested in the patient, and, as a result, is playing an important role in clinical diagnosis and in the determination of the proper form of treatment. To do so he must be familiar, not only with advances in his own specialty, but also with those of medicine in general. Truly, the pathologist of today needs to know more and more about more and more.

The same wit who defined a specialist defined a general practitioner as one who knows less and less about more and more. Certainly those of us who know general practitioners will not agree with this definition. Some prefer to call him a practitioner of general medicine, others a specialist in the general practice of medicine. Whatever his title, he remains the backbone of medicine today and its hope for the future. To be successful he must combine the art and science of medicine more effectively than any limited specialist. He also has come a long way from the horse and buggy days when he spent most of his time on the road to and from his patients, and carried all his diagnostic facilities and therapy in one or, at the most, two bags. Today, more and more of his patients are being seen in the office, and a high percentage of them are under his care in a large or, more often, small hospital. He is confronted daily with problems in pediatrics, obstetrics, internal medicine, fractures, general surgery, and last but not least, geriatrics. Surely, he like the pathologist, needs to know about more and more.

It is generally agreed that pathology is the foundation of the practice of medicine. The practitioner, general or limited, must have an understanding of the pathology of a disease in order that he may correctly diagnose it and outline its treatment. Pathological anatomy is stressed in the undegraduate training of the medical student so that the graduate in medicine, especially in these days, has a good theoretical knowledge of its contents. However, the scope of pathology has become so broad, with the developments in pathological physiology, physiological chemistry, bacteriology, immunology, serology, and hematology, that the average medical graduate cannot hope to retain more than a minimal knowledge of the subject. If he becomes a general practitioner he is too busy caring for patients with all kinds of

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complaints to pursue his study of these subjects except as one or possibly two of them intrigue him or, of necessity, demand his attention. The role of the pathologist is to provide this knowledge in order that the clinician may apply it in the diagnosis and treatment of his patients.

The multitude and variety of clinical laboratory tests available today is phenomenal. Which tests are of real value? Which tests should be used in a given case? These are questions which the general practitioner cannot always be expected to answer. Unfortunately only a relatively few laboratory tests are diagnostic. The presence of amebae histolytica in the stool is diagnostic of amebiasis; a fasting blood sugar of 125 mg. per cent or more invariably means diabetes; a positive Friedman test usually denotes pregnancy; and the presence of blast forms in the blood smear suggests leukemia. The well-trained chemist or technologist can and does perform most of these tests, but it requires the opinion of one who is specially trained to evaluate them properly in a given case. The general practitioner cannot be expected to do so in every instance and he needs someone to do it for him. The pathologist can and should provide this service. The large hospital or teaching institution has facilities for performing most of the laboratory tests available today. However, the small hospital, in which the majority of the general practitioner's patients are taken care of, rarely provides such complete service. Here again the pathologist can be of great service to the general practitioner in outlining the minimum laboratory procedures of value in a given case and also of suggesting other tests if the basic tests do not supply the answer. The technician is not qualified to do this and should not be relied upon to do so.

With the growth in the number of laboratory tests, the technical difficulties in their performance have multiplied. Time and training are necessary if the results of tests performed by technicians are to be reliable. The evaluation of the newer tests requires time-consuming study. The average general practitioner does not have the time to attend to these details nor does he have the training to supervise the work of the laboratory technician. Here, again, the pathologist can be of service to him.

Undoubtedly the most important fields in which the pathologist can be of assistance to the general practitioner are in tissue diagnosis, both surgical and postmortem, hematology, bacteriology, and serology.

More and more surgical procedures are being performed in the smaller hospitals, especially in rural areas. It is just as essential, for the protection of the public and the professional growth of the surgeon, that tissues removed at operation in the small hospital be examined by a pathologist as in a large hospital. Likewise, the postmortem examination is as necessary a procedure in the small hospital as in the large hospital if the staff members are to profit by errors in diagnosis, evaluation of therapeutic measures employed, and a discussion of the pathogenesis, symtomatology, diagnosis, and treatment of a given disease. The clinical-pathological conference, conducted by the pathologist, who has the surgical or postmortem material at hand for demonstration, can be as stimulating an event in the small hospital as in the large hospital. Again, the pathologist can be of great service to the general practitioner in this respect.

Forensic medicine is a field which has not been given the attention it deserves. The quality of the testimony of the medical expert in court is being questioned, and the accumulation of medicolegal data concerning the investigation of deaths in which there is a suspicion of criminal, traumatic, or occupational origin, leaves much to be desired. Too many postmortem investigations of such cases are being performed by practitioners who are neither trained in pathology nor in medical jurisprudence. The pathologist can relieve this situation if he is asked to perform the autopsy and to consult with the practitioner who is interested in the case.

The role of the general practitioner in the early diagnosis of cancer is more fully appreciated than ever before. The American Cancer Society is stressing the advisability of periodic physical examinations by the family physician. Usually the family physician is a general practitioner. The Society has developed a broad program of progressional education beamed at the general practitioner, for if he sees the patient first he must be "cancer minded" and it is his duty to give the patient a thorough physical examination. Fortunately a large percentage of cancers can be seen or felt. Those beyond these two senses can usually be detected, even in their early stages, if the examining physician has a high degree of suspicion and is willing to refer his patient to others who

have special diagnostic facilities at their command. More and more general practitioners in my area are doing biopsies of skin, mouth, and cervical lesions. From there on the services of a pathologist are essential.

The diagnosis of exfoliated cells, as popularized by Papanicolau, has placed a potent weapon in the hands of the medical profession in the war on cancer. Any general practitioner who takes the time to learn the simple technique of obtaining smears from the vagina and cervix, or of collecting sputum and urine, can complete the first step in a most valuable screening test for cancer. The next step is that of interpretation of the cells present in the prepared specimen. This requires the services of one who is trained in histology and histopathology. Undoubtedly technicians can be trained to eliminate the specimens which contain normal cells, but it requires an expert to recognize the abnormal cells. The general practitioner should understand the complexity of this problem and not be led to believe that the procedure is simple and can be delegated to a technician, no matter how well trained he or she may be. Furthermore, it should be emphasized that a cytologic diagnosis of exfoliated cells is not always the final answer. Failure to recognize malignant cells in a smear will lull the physician and patient into a sense of false security, and a positive diagnosis of malignancy may be disastrous unless it is confirmed by other examinations. The role of the well-trained and experienced pathologist in this procedure is obvious. The method will fall into disrepute unless clinicians, and the public, realize that it is primarily a screening test for cancer, the results of which depend on the ability of the examiner to recognize individual malignant cells.

Postmortem examinations are as important in the practice of the general practitioner as in that of the specialist. A few general practitioners perform a very good autopsy, especially those who have taken an interest in the procedure during student and intern days. But the number is limited, and most general practitioners with whom I come in contact are reluctant to perform a postmortem examination because they realize their inability to do it properly. They appreciate having a pathologist available to perform the autopsy for them. Most pathologists are glad to co-operate even though it may require much of their time. The problem of compensation for the pathologist who performs an autopsy on patients who have not been patients in his hospital is difficult because it is usually done for scientific reasons and the relatives cannot be charged for it. Clinicians must recognize this problem and give it due consideration when the financial agreements between the pathologist and the small hospital are being discussed.

The general practitioner is often confronted with problems in hematology. Advances in the diagnosis and treatment of the diseases of the blood have been phenomenal during recent years. The pathologist can be of inestimable service because of his knowledge of the peripheral blood picture in the anemias and leukemias. He supplements these studies with those of the bone marrow. Most general practitioners are not trained to do this work and, if they rely on the final judgment of the technician, they will fail to give the patient all that modern medicine has to offer. The treatments of the deficiency anemias and of pernicious anemia are well standardized at present, but a correct diagnosis must be made first unless the clinician is content with "trial and error" methods of treatment.

The development of chemotherapeutic agents and the antibiotics has revived an interest in bacteriology. Even the small hospital laboratory can perform the simpler bacteriological procedures, provided the technician has someone competent to supervise her work. This is also true of serologic tests for syphilis, brucellosis, mononucleosis, et cetera.

Blood transfusion is becoming a routine procedure even in the smaller hospitals. The danger of transfusion reactions can be minimized if the laboratory technician is well trained in the determination of the blood groups and the performance of compatability tests. These procedures require the use of potent testing sera and a thorough knowledge of the importance of painstaking cross matchings in order that disasters may be avoided. This is particularly true in patients who have had previous transfusions or when female donors are used in whom sensitization to the Rh factor has occurred. It is true that a patient's condition may be so critical that the taking of chances by hurried perfunctory tests of the patient's and donor's blood is justified, but such instances are rare. It is far better to take a little more time and be safe. The practitioner should realize that time is required to do careful work. The pathologist, who is trained in this field, can establish standards of performance in the laboratory under his super-

vision and serve as a consultant when perplexing problems arise. The growth in importance of the Rh factor in blood transfusions, as well as in pregnancy and in the newborn, demands that facilities for its study be available in every hospital regardless of size. This is not a simple problem, as every pathologist will testify. Constant care must be exercised in order that incorrect results are not obtained through lack of training and experience on the part of the technician or because of the impotence of the anti-Rh serum being used. Here again, a pathologist can supervise the work of the technician and unsnarl the difficult problems that invariably arise. Few general practitioners are competent to do so.

From the foregoing I believe we can agree that the average general practitioner cannot be expected to be competent in the field of laboratory medicine and that the pathologist can be of great service to him. However, we have not discussed the availability of the pathologist to the general practitioner, and the willingness of the general practitioner to seek the services of the pathologist. There are approximately 6400 registered hospitals in the United States. About 1600 pathologists have been certified by the American Board of Pathology to date. Of this number many are doing research work exclusively; many are teachers who do a limited amount of actual practice, and a few are engaged in a limited field in the specialty. A small number of pathologists are not certified, either by choice or through inability to qualify. Quite a number of clinicans work in pathology on a part-time basis. From these figures it is apparent that the ratio of hospitals to pathologists is about four to one. The 6400 registered hospitals includes many with less than fifty beds. However, there are a large number of hospitals with a bed capacity of 75 to 150 which do not have the services of a pathologist, even on a part-time basis. The reasons for the shortage of pathologists are numerous. It is true that a different temperament is required of the pathologist than the clinician. Too often medical students and interns have been discouraged from going into pathology because the pathologists with whom they have come in contact have been of the "recluse" type and have not manifested sufficient interest in the patient or in the welfare of the profession. The American Society of Clinical Pathologists has recognized this problem for several years and has taken steps to correct it through an educational campaign among its own members and also directed toward hospital interns and residents. The recently organized College of American Pathologists is stressing the same program. The greatest deterrent, however, has been the economic insecurity of the pathologist, at least until the past decade, and the reluctance of many clinicians to accept the pathologist as a full-fledged member of the hospital staff. Pathologists in general have done well financially of late, but there still exists a tendency on the part of hospital authorities to exploit the pathologist and to make the clinical laboratory cover the deficits incurred elsewhere in the hospital. Clinicians can help to remedy this situation by insisting that the pathologist be adequately compensated for his work, commensurate with his ability. They can also contribute to his financial security by refusing to patronize commercial laboratories operated by laymen, and by discouraging the use, development and expansion of so-called "free" laboratory services in institutions owned and operated by governmental agencies through tax funds. No one will deny that the public health laboratory has a legitimate function in the diagnosis and control of communicable diseases, but it should not be permitted to offer other diagnostic tests free of charge for patients who can afford to pay for such services. The pathologists of Minnesota and of my state are willing to perform laboratory tests and tissue examinations on any patient certified as medically indigent by his physician provided he is also contributing his services.

Clinicians generally are awakening to the danger of governmental intrusion in the fields of pathology, radiology, and anesthesiology because it may well serve as the entering wedge to a complete socialization of the practice of medicine. Much is being said these days by planners, in and out of government, about "diagnostic centers" and "diagnostic facilities." Ostensibly the purpose is to provide facilities for diagnosis, such as x-ray and clinical laboratories, where they do not already exist. If so limited, they would undoubtedly be of great service to the practitioners located in rural and the smaller urban areas. However, they must be subject to local control, as they may be the means by which an ambitious bureaucracy will gradually encroach upon the practice of medicine. Pathologists are vitally interested in this subject, for they realize that a

government sponsored and subsidized facility may develop into a vast system of similar facilities located everywhere, including those areas which are adequately served by private facilities and thus replace the present system of private enterprise. Clinicians, especially the general practitioners who might be tempted to look with favor on such a form of government subsidy becauses it promises to offer facilities which are not presently available to them, should scrutinize this movement carefully before endorsing it. Many small communities in the north central states are demonstrating, by co-operative effort, under the guidance of local lay and professional leaders, that they can solve their own problems of providing adequate hospital and diagnostic facilities. More communities should be encouraged to do likewise.

If the number of pathologists increases, and there is every indication that it will, what can be done to locate them where they are needed? The American Medical Association is stressing the importance of the general practitioner in the practice of medicine, and its committee on rural health, with the assistance of the organized farm groups, is co-operating in every way possible to provide more practitioners in the rural areas. The Hill-Burton Construction Act has stimulated interest in the building of hospitals and health centers where they are needed. These facilities will provide the general practitioner with a place in which he can care for a large majority of his patients. But what about the supply of nurses, technicians, anesthetists, and especially pathologists? The answer would seem to lie, so far as the pathologist is concerned, in a coordinated network of health centers, rural hospitals and district hospitals, in which the pathologist would have his headquarters in the district hospital. He would supervise the laboratory work in the rural hospitals and health centers through regular visits. With modern methods of transportation the pathologist could answer emergency calls within an hour or two. Perfection of such a system would place the pathologist within easy reach of the practitioner, and those tests, including the preparation of tissues for diagnosis, which are not performed in the smaller laboratories, would be done in the central district hospital laboratory. This plan conforms to the general outline of the federal government's planning. The details of finances would have to be worked out, but this would be relatively simple if all concerned, including the practitioners and the hospital authorities, agree that the pathologist is a physician and must be adequately compensated for his services if he is to remain in the area. If successful, the plan would result in better medical service in the rural and small urban areas, where the clinical work will undoubtedly be performed, primarily by the general practitioner.

It is a common observation that the level of medical practice in a community is dependent, to a large degree, upon the quantity and quality of pathological service available. Decentralization, rather than centralization, is the present emphasis, and the general practitioner is the key figure in this movement. He must have every assistance possible, in order that he may offer his patients the very best in medical service. The pathologist can play an important role in this development. However, the practitioner must appreciate his worth and his ability to contribute to the practice of scientific medicine, and he must desire his services. In the final analysis the practitioner has the patient; the pathologist has only his ability to serve when called upon by the clinician. It is the earnest desire of pathologists to join in a co-operative effort with practitioners everywhere in order that all the people may enjoy the benefits of modern medical practice. We are all practitioners of medicine. We are all dedicated to the prevention of disease and the relief of suffering. United we cannot, we will not, fail to fulfill our mission and to preserve our heritage of a free and unfettered profession.

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RADIOGRAPHIC EVIDENCE OF INTERMITTENT PROTRUSION OF AN INTERVERTEBRAL DISC

Case Report

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INTERMITTENCY of symptoms of backache and the sciatic syndrome, produced by ruptures of the intervertebral discs, is one of the characteristics of these cases. Relief of pain has often been effected by manipulation or postural changes. Macey[1] speculated on the probability of reduction of the prolapsed nucleus into the intervertebral space in these patients with intermittent pain.

The following is a case report showing this phenomenon.

The patient, a white woman, age thirty-nine, had had episodes of back and left leg pain for five years. The present siege was initiated by lifting her small child a few days before hospitalization, when she felt "something snap in her back," followed by inability to move for a short while and continued back pain radiating down the left leg. During the next few days she received relief of pain for periods up to several hours after chiropractic manipulation, followed by recurrence of pain, more manipulation with pain relief and then further recurrence.

She was admitted to St. Luke's Hospital on February 8, 1948, complaining of back pain with radiation to the left leg and some twitching of the lower leg muscles and numbness in the toes. Her remote past history was non-contributory, as were the general physical examination and routine laboratory tests. The knee jerks were present; the ankle jerks were absent. Straight leg raising produced pain at 45 degrees on the left, with an area of hypesthesia on the dorsum of the foot extending to the great toe.

Following the use of extension applied to the left leg for forty-eight hours, an opaque myelographic examination was made. Preliminary radiographic study revealed bilateral spondylolysis between the fourth and fifth lumbar segments and Grade I spondylolisthesis at the lumbosacral joint, with isthmus defects at these levels. Using 5 c.c. pantopaque intrathecally, later removed, a rare observation was made fluoroscopically and recorded radiographically. With the patient prone and the left side raised, no appreciable abnormal findings were seen on the first caudal excursion of the media. On the second excursion with the patient standing on her left foot, pain suddenly became manifest and a classical extradural defect in the column of media, characteristic of protrusion of an intervertebral disc, became apparent at the level of the lumbosacral joint on the left side.

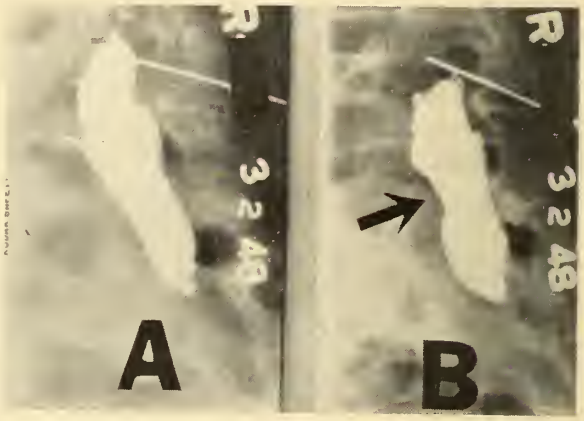


Fig. 1. (*A*) The pantopaque-filled lumbosacral subarachnoid space, with patient lying in a prone position with the left side slightly raised, revealing normal myelographic findings. (*B*) An extradural defect (black arrow) due to protruded intervertebral disc, which finding occurred after the patient experienced pain during the examination.

Figure 1*A* shows the radiographic findings before pain and Figure 1*B* after the pain. It was felt that the deformity was due to protrusion of a ruptured intervertebral disc rather than to any change caused by the spondylolisthesis.

On March 8, 1948, an operation for removal of the ruptured intervertebral disc and spinal fusion was performed by one of us (C.C.C.). A protruded intervertebral disc was found on the left side between the last lumbar and first sacral segments and was removed, and fusion from the levels of the fourth lumbar to the first sacral vertebrae was effected with bone grafts taken from ilium. Convalescense was uneventful, and the patient has had no further back pain.

Comment

It is probable that the spondylolisthesis and spondylolysis contributed to the mobility of the protruded disc, to the intermittent character of symptoms and to the relief obtained by manipulation in this case. Fairly good radiographic evidence, however, has been produced to show that intermittent protrusion of a ruptured intervertebral disc does occur, accounting for a cause of intermittent symptoms.

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Read before the Ramsey County Medical Society, Saint Paul, Minnesota, April 25, 1949.

History of Medicine In Minnesota

MEDICINE AND ITS PRACTITIONERS IN OLMSTED COUNTY PRIOR TO 1900

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Rochester, Minnesota

"History is the essence of innumerable biographies."
Thomas Carlyle (1795-1881): On History

The first to record the general history of Olmsted County, Minnesota, it is believed, was William H. Mitchell, a newspaper publisher of Rochester, who in 1866, after several years of research and compilation, brought out his *Geographical and Statistical History of the County of Olmsted, together with a General View of the State of Minnesota, from the Earliest Settlement to the Present Time.* The history is a paper-bound booklet of 121 small pages, to which are affixed some eighteen pages of regional advertising, with lists of lawyers and physicians of Rochester.

In glowing phrases Mitchell described the beauty and promise of this county of some 650 square miles, most of it tillable, whose mean elevation is 1180 feet; the warm black soil, deep and rich; the gently rolling prairies and the lush meadows; the abundant waters of the Zumbro,* Root and Whitewater Rivers, of Cascade, Bear and Silver Creeks and lesser tributaries, and of ever-flowing springs; the picturesque bluffs and rocky dells along the water courses; the varied timber bordering the streams, the upland groves and, in the northwestern part of the county, the heavy hardwood growth that locally was called the "Big Woods." He pictured vividly the blue distances, the incomparable summer verdure and bloom, the native fruits, the gorgeous autumn coloring, and the wild animal life that contributed to the food supply of the early settlers, and he stressed the moderate climate and exhilarating atmosphere. "Perhaps the eye of man never rested on a spot of earth which for fertility of soil, beauty of landscape and healthfulness of climate and location, was better fitted to meet his material wants, and to supply the necessities of his nature, since shut out from the original Eden." He continued:

> Looking backward for only a few short years, and we see no signs of civilization, neither of habitation, save the wigwams of the red men and their trails as they make their way to their hunting grounds farther west, their council fires, and their bark canoes gliding over the water of the various streams, and we have a truthful picture of Olmsted County as it was previous to 1854, ere the hand of civilization had disturbed its wilderness and primitive state. Today we look again. Twelve years have passed away, and behold what a change. The magic wand of civilization has been waved over the broad prairies and openings, and art, science and commerce, combined with the real western energy, have covered the wide expanse with cultivated fields and golden harvests; have made roads and built bridges, and dotted the prairies with pleasant dwellings, busy villages and the bustling city.

Mrs. Guthrey was a member of the Editorial Department of the Mayo Clinic, 1916-1919, and personal secretary and assistant to the late Dr. William James Mayo, 1919-1939.

*The name of the Zumbro River is a corruption of "La Rivière des Embarras," meaning river of hindrances, which was given this stream in Wabasha County by early French explorers because floating driftwood hindered their canoes. Early spellings of *Zumbro* were *Zombro* and *Zumbra.* In Goodhue County the Sioux Indians early called the Zumbro River "Wazi Oju," meaning "planted pines," because of a grove of large white pines on its banks near the site of the present village, Pine Island.

Olmsted County, once part of the original great Wabasha County, which was established on October 27, 1849, and which comprised most of southeastern Minnesota, was created by act of the territorial legislature on February 20, 1855. The first meeting of the county commissioners was held at Oronoco on August 27, 1855. The county was named for the Hon. David Olmsted (1822-1861), who was an early and important figure in Minnesota history. A native of Fairfax, Vermont, David Olmsted in 1844 came as an Indian trader to Iowa and in the next two years was instrumental in drawing up a constitution for state government of Iowa. In 1848 he established a trading post in Todd County, Minnesota; in 1849 he became a member of the council of the first territorial legislature and was president of the legislature at its first session. Subsequently he settled in Saint Paul, where he founded the *Minnesota Democrat*; in 1854 he was the first mayor of the city. A year later he removed to Winona; soon afterward, his health having failed, he returned to Vermont, where his death occurred.

Olmsted County is in the second tier of counties above the Iowa line and is bounded on the north by Goodhue and Wabasha Counties, on the east by Winona County, on the south by Fillmore and Mower Counties, and on the west by Mower and Dodge Counties. Its eighteen townships, each of eventful history, were organized in the period between May, 1855, and May, 1859. They are listed here in four tiers from south to north, the individual townships from east to west: (1) Elmira, Orion, Pleasant Grove, High Forest and Rock Dell; (2) Dover (originally Whitewater), Eyota (originally Springfield), Marion, Rochester and Salem (originally Lexington); (3) Quincy, Viola (originally Washington), Haverhill (originally Zumbro, then Grant, then Sherman), Cascade and Kalmar; and (4) Farmington, Oronoco and New Haven. Olmsted County owes its deviation from rectangular shape to the fact that, for political reason, soon after organization of the county, two townships in the northeastern corner were detached and given to Wabasha County, and that on May 22, 1857, a strip of land one mile wide and twelve miles long, comprising Sections 1 to 6, inclusive, in Township 104, Ranges 14, 15 and 16 in Mower County, was attached to the southwestern corner of Olmsted County, forming part of High Forest Township and bordering Rock Dell Township on the south. For many decades after its transfer to Olmsted County this addition was known as the "Mile Strip" or the "Panhandle."

In recent articles (Guthrey) on early medicine and its practitioners in Houston and Fillmore Counties, there was given brief description, which is not repeated here, of conditions of living in southeastern Minnesota during the early decades of the nineteenth century, beginning with the first penetration of the region by white men and touching on the opening of navigation on the Mississippi River and the first fringe of settlements along the river; the establishment of the territorial government, followed by treaties with the Indians and opening of regional federal land offices; and the trickle of immigration westward that by 1854 had become a tide.

Settlements sprang up in Olmstead County, created by pioneers of all types, classes and occupations and of various nationalities, who came to the land of hope intent on realizing economic independence and, many of them, improved social condition. Although many of the townships of the county were settled largely by Scandinavians, others by Germans, and lesser localities by Irish, in the influx of immigration, which continued unabated well into the late sixties, Olmsted County received a larger proportion of English than did near-by counties. Many of the English came directly from England and many more from New England. New England, it has been said, furnished the ferment that did much to Americanize

the diverse peoples who settled the county. Some of the physicians who came from New England were among the best educated of the pioneers for citizenship and for their profession. Many of them spoke several languages; some of those from northern Vermont were well versed in French, having learned the language in preparation for practice among the French who had come into Vermont from Canada. Relatively few of the pioneers, of whatever descent, except those who came as part of certain groups of colonists that had been organized in the East or in Europe, made an unbroken journey from the Atlantic States to Minnesota. The recurring note in biographical accounts has been of gradual westward travel. A typical family history tells of removal from New England to Pennsylvania, to Ohio, to Illinois, and on to Wisconsin, before final settlement in Minnesota. Most of the pioneers traveled in covered wagons drawn by oxen, and the newspapers of Rochester and other settlements commented enthusiastically in each issue, well into the seventies, on the fleets of prairie schooners that daily were passing through, carrying families who were bound for prairie farms. The influence of all nationalities is apparent in names given to villages, townships and topographical features.

Although one history (1883) mentions a pioneer clergyman in the future Olmsted County as early as 1850, an accepted account is that late in 1852 or early in 1853 Jacob Goss settled on land in what was to become Pleasant Grove Township. There came into the region before him, however, in the spring of 1852, a little band of explorers from Wabasha Prairie (Winona) led by Dr. John L. Balcombe. This physician of the regular school, never a resident of Olmsted County, made such expeditions an avocation, it is said, and his habit of close observation, together with a photographic memory for topography, gave him an especial advantage. On the trip in 1852 he discovered and located as a timber claim the site of High Forest Village in High Forest Township. It was not until March, 1854, that he again guided to this spot some of the men who formerly had accompanied him and sold them his rights; these men, soon followed by other pioneers, founded the permanent settlement. Other communities were established in 1853 and 1854 in various parts of the county, and from then on the work of settlement and improvement was rapid. Trails and roads were opened and mail service was established. Stagecoaches, drawn by four horses or more, had their long term of vital usefulness, during which numerous inns, at crossroads and in settlements, offered hospitality to man and beast. The Old Territorial Road between Dubuque and Saint Paul crossed the county, passing through Pleasant Grove, Rochester and Oronoco. By 1864 the railroads were coming into the county, at first supplementing the stagelines and eventually supplanting them. Olmsted County, like its neighbors, has its phantom villages, most of which are the remnants of settlements that sprang up in those early years around millsites or other vantage points. When natural water power diminished in the course of years, or when the railroads left the ambitious villages to one side, they became ghost towns.

The site of Rochester, the county seat, in Rochester Township, received its first settlers in the spring of 1854, in what became North Rochester. In the same season a band of surveyors staked a claim near the falls of the Zumbro River, a cascade that they called the Falls of Wazi Oju; a few weeks later this claim was jumped by pioneers seeking a location. In that summer George Head named the settlement Rochester, after Rochester, New York, and it is said that he established the main street, Broadway,† by having a log dragged through the

†In this history the names of streets in Rochester are the original names, unless otherwise stated. About 1919, for the convenience of transient visitors who found the unrelated names of streets and avenues confusing, the city was divided into sections, Northwest, Northeast, Southwest and Southeast, and most of the streets and avenues were renamed numerically and geographically in each section. The streets run east and west, the avenues north and south. Broadway retained its name.

hazel brush by an ox team. The first celebration of the Fourth of July in the county was held in Rochester in 1854 by the three adults and the two children then resident there. Rochester was platted in October, 1855. In that year Dr. Jesse N. McLane, of Rochester, was appointed the first register of deeds of the county, and in 1856 Dr. Ira C. Bardwell, also of Rochester, became the first clerk of the district court. Rochester became the county seat in the spring of 1857, winning the honor over Oronoco and Marion in a hard fought political contest, and on August 5, 1858, it was incorporated as a city.

Olmsted County kept step with the neighboring counties in all matters of settlement and civic progress, in establishment of businesses and manufactories, and in founding newspapers, churches and schools. In Rochester, strange to say, there was apathy about public schools; the only schoolhouse of the settlement for several years was a little log house, which doubled as a public meeting house, east of the Zumbro River. By 1861, however, the city was redeeming itself in this respect, and in the next twenty years it achieved not only excellent and ample public schools, largely through the influence of local physicians, many of whom served in turn on the board of education, but had a numerous succession of private "select" academies and seminaries. Of the private schools the Rochester English and Classical School or "Niles Academy," of Professor and Mrs. Sanford Niles, endured longest and had well-deserved prestige. Most of the local young people of the late seventies who aspired to education higher than the rural schools and the Rochester High School could offer, were at some time pupils at Niles Academy; many of the young men became merchants, lawyers or physicians in the county or elsewhere.

Rochester might have been a college town. In 1870-1871, when Hamline University was about to leave Red Wing and made overture to Rochester for a site of ten acres and financial aid to erect a building costing $75,000, the city, in spite of the earnest efforts of a few citizens of vision, among them Dr. W. W. Mayo and Dr. E. C. Cross, rejected the opportunity in order to avoid increase in taxes.

Once aroused to educational and cultural needs, Rochester in the early sixties organized a library association, in which Drs. E. C. Cross, E. W. Cross and W. W. Mayo and prominent lay citizens were active, and instituted a course of lectures open to the public. There were brought to Rochester public speakers, artists and scientists notable in their day, among them Dr. A. L. Sperry, of Carleton College, who talked on physical science, and the eminent Wendell Phillips, Roger A. Pryor, E. P. Whipple and E. L. Youmans. A Negro contralto, "The Black Swan," came, as did Ole Bull, the great Norwegian violinist. When outside talent was not available, local citizens who had a varied fund of information and a bent for public speaking lectured before various groups; among these early speakers were Drs. J. A. Leonard, W. W. Mayo, L. H. Kelley, Hector Galloway, E. C. Cross and E. W. Cross. Perhaps not sponsored by the Library Association were Jane G. Swisshelm, Phoebe Couzens, Mary Livermore, Elizabeth Cady Stanton and Susan B. Anthony, all of whom spoke on women's rights. In certain villages of the county also courses of lectures were organized, and Dr. Alexander Grant, of High Forest, was a speaker and patriotic orator much sought. There was occasional entertainment. The famous dwarfs, Colonel Tom Thumb, Lillie the Fairy Queen, Commodore Nutt and Minnie Warren were heralded, and there were miscellaneous phrenologists, magicians, ventriloquists and clairvoyants, traveling theatrical troupes and "gigantic" circuses, over a long period. The audiences were drawn from all over the county.

A rapidly moving epochal film of the county from 1854 would show wandering bands of Sioux Indians, puzzled by enforced removal of their tribes westward,

who lingered in the county, especially in and around Rochester. Between 1854 and 1856 they occasionally camped 200 strong in favorite sites on the banks of the Zumbro and struggled in groups through the settlement, pressing their faces against the windows of the pioneers' cabins and then stalking in to demand, or to take, food. Perhaps the first practitioner of medicine in Olmsted County was their medicine man, Muzomoney. In the autumn of 1854 a disease believed to have been smallpox broke out among the Indians. When a squaw died, Muzomoney said that she had eaten some honey and with it had swallowed a bee, which stung her in the throat or in the stomach and killed her. Her body was placed in the old Indian burying ground on Indian Ridge north of town; vestiges of Indian skeletons were found there until the cyclone of 1883 swept away all macabre remnants. Other incidents of illness among the Indians have been recounted. The last red men known to have passed through the city were some Winnebagoes who in 1862 camped on Zumbro Street near the site of the present county court house.

A Golden Era would be flashed on the screen. In 1858 gold was discovered along the Zumbro River at Oronoco and at Rochester. The Oronoco Mining Company was organized, and sluices and equipment were installed at Oronoco. Enough gold was recovered for Mr. Eleazer Damon, pioneer jeweler of Rochester, to make a set of waistcoat buttons for Dr. E. C. Cross and to fashion several wedding rings before flood waters washed away the sluices and ended the enterprise. A little later marl and peat were discovered not far from Rochester, and oil was proclaimed at High Forest. Nothing notable came of these discoveries.

Attention could be given to native products of healing value, real or supposed. In the fifties and sixties, and much later to some extent, the gathering of the fleshy, bifurcated ginseng root became a minor industry in southern Minnesota, chiefly in the region of the Big Woods, but also in the southeastern counties. Whole families, to eke out their income, devoted time and effort to gathering ginseng, of supposed medicinal value, for sale to local dealers, usually druggists, for export east and to China. By the sixties the common snakeroot, of the milkwort family, of proved medicinal worth, became the object of interest locally for its commercial value. The *Rochester City Post* on August 1, 1863, said:

> "A medicinal plant, the Seneka Root (Polygala senega) has become quite an article of export hereabouts. J. D. Ameigh and Co. of this city have, during the month of June last, purchased and shipped upwards of 800 pounds of this article, designed for use in eastern cities, in the preparation of expectorants and cough remedies. The price paid for use in eastern cities has been from 50 to 60 cents per pound, and in some seasons readily brings from 75 cents to $1 per pound. This plant grows everywhere throughout our fields and pastures, is easily gathered and prepared for market, and with the inducement that Messrs. Ameigh and Co. intend to offer next season the Seneka trade will bid fair to outrival the ginseng excitement of the 'Big Woods'"

About a product of another sort, a story in 1909 called attention to a bed of "medicated clay" near a medicinal spring in West Salem Township. It was said that the Indians had been frequenters of the spot in earliest years and that they had taught the pioneer settlers the uses of the smooth, oily-feeling clay in curing swellings, rheumatism, inflammation and bee stings.

A picture could be shown of the streets of Rochester thronged with men in army blue. During the Civil War, Olmsted County sent to the Union Army 1,250 men from its total population of 12,000. All the villages and rural communities were represented. There were, for example, the Oronoco Guards and the Dover Guards, the Olmsted County Tigers and the Olmsted County Volunteers, and Sanborn's Guards, of which lesser groups became part. The service of men

from Olmsted County, laymen and physicians alike, in different regiments of Minnesota is a matter of official record. Some of Rochester's physicians played useful parts. Dr. L. H. Kelley offered his professional services free of charge for the period of the war to the wives and children of men in the armed forces from Olmsted County. Dr. Hector Galloway, of Oronoco, was an organizer of the Oronoco Guards and in 1864, then in Rochester, became surgeon of the Thirteenth Regiment, Minnesota State Militia. Dr. E. C. Cross helped to organize the Olmsted County Volunteers and was chosen to tender the services of the company to the governor of the state. Dr. E. W. Cross went to war in 1861 as assistant surgeon of the Fourth Regiment of Minnesota Volunteers and in 1863 became surgeon. When the Enrollment Board of the First Minnesota District was established in 1863, with headquarters in Rochester, Dr. W. W. Mayo, who had seen service in defence of New Ulm against the Sioux Indians in August, 1862, came to Rochester in April, 1863, on appointment as surgeon to the board. In this work Dr. Galloway shared, as did Dr. E. C. Cross, who succeeded Dr. Mayo on the board in 1865. Throughout the war the local newspaper lauded the patriotic, inveighed against laggards, deplored the "shinplaster nuisance" and called for new postal currency, and praised women for sending boxes of food and clothing to military hospitals for the benefit of the wounded. The Red Cross Society was to come to Olmsted County much later, as will be shown. The headlines, especially about women at work in fields and offices and stores (office work and salesmanship were daring undertakings for women in those days), except for dated rhetoric, could be those about women at work during World War II. All the regional press abounded in notices to soldiers and to the widows of deceased soldiers from agents who made a business of collecting bounties, back pay and pensions. Long after the war was over, the blue of the Union Army was a familiar sight; the uniforms, the long-visored caps, the long coats with shoulder capes, were casually combined with civilian clothing by men on the street or at work in the fields.

The picture would have a background of fertile fields. Olmsted County always has been primarily devoted to agriculture, stockraising and dairying, and it early won its title as one of the great food baskets of the "bread-and-butter" state. Fruit trees that could withstand the climate were imported. Farmers year by year expanded their wheat fields. The farmers most able financially brought in fine breeds of hogs, sheep, cattle (beef and dairy), and blooded horses (draught animals, roadsters and racers) from within the United States and from Europe. From the beginning, most of the established physicians of the county owned fine farms and were distinguished for their horses, especially the roadsters that were vital to transportation in medical practice, and, some of them, for their racing stock. The county fair was instituted early, featuring livestock, agricultural and dairy products and the domestic arts, with the usual contests and amusements. For several years in the sixties and again in 1882 the Minnesota State Fair was held at Rochester. In 1870, in a running race for boys, Maitland E. Cross, son of Dr. E. W. Cross, and William J. Mayo, son of Dr. W. W. Mayo, won first prize and second prize respectively; Leonard, in his county history of 1910, said about this event, "This was the only instance in which Dr. Mayo has been known to come out second best." The coming of fine livestock brought cattle thieves and horse thieves, who long caused much trouble. The county anti-thief society was formed in 1863. All communities were aroused. The Viola Anti-Horse-Thief Society, organized in 1874, functioned long after the turn of the century.

As agriculture became established, the abundant native growth of hazel nuts, wild plums of exceptional size and flavor, and the superior wild strawberries that covered large areas began to disappear. The wild animals, some of them per-

nicious, more of them gentle and harmless, were exterminated. The skins of wolves and wildcats brought bounties. Deer soon were unknown; the last elk seen in the county was shot in 1859 a mile or two from Rochester. The vast flocks of prairie chickens, the prairie sharptailed grouse, whose drumming or booming was the first sign of spring, soon diminished. There was a time, an old settler has said, when these birds were so tame that they perched on fences near farmyards "looking, with their feathers puffed out, as big as turkeys." Their nesting grounds became plowed fields, and the birds, trapped and hunted, became so scarce that in 1876 the editor of the *Rochester Post* declared that the county had become too old and too highly specialized for first rate chicken shooting. The beautiful passenger pigeons met tragedy in this region. Like mourning doves, but much larger and more brightly colored, they came annually in May and June, in their flight day after day filling the sky from southeast to northwest and darkening it from horizon to horizon, returning to their nesting places or "roosts," which extended for miles in the woods in various parts of the county.* Although the birds were doomed, they returned in vast flocks to Goodhue, New Haven, Chatfield, and Pleasant Valley (west of High Forest) as late as 1873. In 1877 a Rochester editor said that the wild pigeons were "almost as numerous as the pigeon hunters"; after that year they were mentioned seldom, if at all, in the Rochester press. Strangely enough, when the passenger pigon was forever gone from Olmsted County, there arrived the ubiquitous English sparrow, in Rochester in January, 1887, and thereafter, the newspapers reported annually for several years, "came out as bright and quarrelsome as ever."

The population of Olmsted County, from a sparse scattering of settlers in 1854, increased rapidly until in 1865 it was 15,178, comprised of 8,019 males and 7,159 females; there were 2,711 families. In 1865 the largest individual annual income in the county was $5,000, and the average income of the best established citizens, in business, in law and in medicine, was about $1,000. The county census of 1870 was 19,700, in 1875 it was 20,940, and in 1880 it was 21,553. Thereafter there was some fluctuation until, after the turn of the century, steady growth began. In 1900 the population was 23,149, with about one-third resident in Rochester. Rochester by 1858 had 1,500 residents; in 1874 it was a city of 5,000, described as being in the interior of a new state on the frontier of a new country. By 1896 the population was 6,000 and for some years, until after 1900, it remained at about that figure. In 1947 it was nearing 30,000.

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*The writer is indebted to Dr. E. A. Hagaman, of Rochester, for the privilege of reading the memoirs. *At the Turn of a Century*, of the late Charles Nicholas Ainslie, several times quoted in this history. In that book Mr. Ainslie gave a vivid account of the flights of the passenger pigeons, of the birds alighting in wheat fields, and of the wanton slaughter of adult birds and squabs by hunters who from dusk to dawn thronged the woods that were the roosts. A son of the Rev. George Ainslie, Indian missionary and the first Presbyterian minister in Rochester, in 1861, Charles N. Ainslie spent his childhood and early adult life in Rochester. From 1906 to 1930 he was a member of the Federal Bureau of Entomology in Washington, D. C.

(To Be Continued in August Issue)

President's Letter

WHO WANTS TO KNOW?

A very popular medical science writer, Steven Spencer, associate editor of the *Saturday Evening Post* said recently, with insight and truth, "The private practice of medicine is much more medicine and much less private than it was ten or fifteen years ago. The doctor, striving to familiarize himself with and to evaluate the parade of new drugs and techniques, finds an eager public looking over his shoulder—and sometimes breathing down the back of his neck. Etiology, diagnosis and therapy no longer form a mystic trinity of knowledge to which only the medical profession has access and which the patient must accept on faith."

I think that we doctors have come to recognize and co-operate with the public's desire for medical knowledge and, perhaps belatedly, we realize the power of an informed public in dispelling socialized medicine propaganda.

We have feared overly optimistic reporting of medical advances; we have, with some justification, been apprehensive about mistakes and distortions of medical news. But medical journalism has advanced a long way since 1494, when, it is believed, the first medical news story was printed. A number of journalists have specialized in this field, training themselves to be scientifically accurate, yet phrasing material in lay language. Alert editors are working to slake this general thirst for medical knowledge.

As one Minnesota newspaper editor wrote in his paper last month: "What every newspaperman would endorse would be a working arrangement between the medical profession and the press. Every newspaperman worthy of the name receives and respects confidential information. Every doctor becomes a receptacle for professional secrets known only to his patient and himself. When two agencies, medicine and press, both of them allied to the high principles of confidence, could correlate their work on a non-personal basis, mutual good would result. This . . . is an opportunity for public relations at its highest level."

The Minnesota State Medical Association has scored some noteworthy advances this year in furthering a close relationship between doctors and journalists, for the good of the two professions and the public.

The State-Wide Medical Press Conference brought editors and doctors together to discuss mutual problems. Now, by individual and group effort, these problems are being resolved. The House of Delegates, meeting in annual session at Saint Paul, erased an old area of misunderstanding when it approved a program of ethical advertising by doctors and medical societies. While the income from such advertising probably will not be appreciable, newspapermen recognize the resolution for what it is, a genuine interest in working with the press. County medical societies would do well to devise ethical advertising programs, along the lines suggested by the House of Delegates, as well as to demonstrate an increased awareness of medical responsibility for informing and educating the public.



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

DOCTOR FISHBEIN TO RETIRE

ONE OF THE most publicized events of the AMA convention at Atlantic City in June was the announcement by the trustees that Dr. Morris Fishbein, editor of the *Journal,* is to be gradually relieved of his duties. The announcement came as a surprise to most members of the House of Delegates, the profession at large and the public in general. The name of Dr. Fishbein has been closely linked with the AMA since 1924 when he became editor of the *Journal,* and his many public appearances have led to the impression that the AMA and Dr. Fishbein are synonymous. Perhaps that is why he has aroused so much antagonism within the ranks of the association, which ultimately led to this action on the part of the trustees.

Dr. Fishbein began his medical career in the office of the AMA soon after his graduation from medical school. Under the tutelage of Dr. George H. Simmons, who was not only editor of the *Journal* but general manager of the AMA for twenty-five years preceding his resignation in 1924, Dr. Fishbein received his training in affairs of the organization, acting as assistant editor. In 1924 the administration affairs of the association were divided, Dr. Olin West being made general manager, Mr. Will C. Braun, business manager, and Dr. Fishbein, editor. *Hygeia* was having tough sledding in 1924, and in 1925, Dr. Fishbein was appointed editor also of this lay medical journal and he made a success of it. For one who claimed to have had no natural literary ability this was a large order. He at one time remarked that while in college he was asked by a professor what he intended to do after graduation and was warned he would never be able to write. As a result of practice he trained himself so that he became not only a voluminous writer but an eloquent orator and an authority on medical writing. Although technically only an editor in the national organization, it was he who was chosen to represent the AMA and address lay and medical meetings. That he was outstanding as an entertaining and informative speaker, those who ever heard him can testify. His able services to the AMA in its scientific and organizational spheres have been invaluable. It will take two or three men of no mean ability to supplant him. Dr. Austin E. Smith, secretary of the Council on Chemistry and Pharmacy of the AMA, is slated to succeed Dr. Fishbein as editor of the *Journal.* Dr. Fishbein's successor as editor of *Hygeia* has not yet been announced. Since February, 1949, Dr. Fishbein has been one of the chief editors of *Excerpta Medica,* the monthly abstract journal of the medical journals of the world, published in Amsterdam since 1947. As if he did not have enough to occupy his time without this additional appointment!

One who has followed the daily activities of Dr. Fishbein as recorded in "Dr. Pepy's Diary" must have been impressed by the strenuosity and variety of his activities in recent years. Many will miss his guidance in the selection of books. That any human being can stand up under such a load without wearing out at an early age is inconceivable. Possibly his retirement is a godsend in disguise.

In any event the medical profession owes a great debt of gratitude for the phenomenal service Dr. Fishbein has given American medicine, and for this reason we are expressing our appreciation.

EXTENSION OF SOCIAL SECURITY

THE PROFESSION has not been unmindful of the proposed legislation being seriously considered by Congress for the extension of social security to include the self-employed doctors, dentists, lawyers, druggists, butchers, bakers, et cetera. The bill, H.R. 2893, now being considered by the House Ways and Means Committee, is about to be submitted to the House of Representatives for debate. It provides in brief for a tax of 2.5 per cent on the first $4,200 or $4,800 of income of all self-employed persons for old age insurance. This would amount to $120 a year if

the figure of $4,800 is used, with the liklihood that the rate and base will soon be raised. At the age of sixty-five a physician would have to give up his practice if he wished to collect $25 to $50 a month. If he were earning at sixty-five as much as $14.99 a month, he would be ineligible for the government annuity even though he had paid his taxes for thirty-five years. Even if a physician continues to earn after sixty-five, he will be forced to pay his social security tax for old-age insurance benefits he is not likely to collect. What physician would voluntarily take out a policy, paying $120 a year during his years of practice with the probability only of a return of $50 a month after sixty-five if he quit practice entirely? The farmers have been so vociferous in their denunciations of such a proposal that they are to be excluded. Their votes count.

Another feature of the bill is that its increase in scope includes the domestic and gardner. The employer will be required to pay these taxes.

The AMA and our State Medical Association have both passed a resolution voicing their disapproval of this legislation. It remains to be seen how much our votes count with a government that needs more revenue.

Much severe criticism has been directed at the government's handling of Social Security. Aside from the fact that it is at present class legislation, funds collected have not been set aside to meet eventual obligations but have been spent by the government, the government substituting nonnegotiable governmental interest-bearing bonds to replace the money spent. What happens when the government needs the billions collected and spent to meet the obligations incurred? More taxes obviously. If private business were to withhold a portion of its employe's salaries to hold for the rainy day needs of the employes, and then should spend the money for expansion or otherwise, simply giving its I.O.U. as security, we imagine someone would be sent to the penitentiary for crookedness. Now the proposal is to expand this badly managed Social Security.

In this connection we are reproducing an editorial which recently appeared in the *Chicago Daily News* which shows that others are cognizant of government high finance.

Treasury Advertising

A leaflet circulated by the Treasury Department to promote the sale of savings bonds, contains this information:

"Question: Why is the government selling savings bonds?"

"Answer: To keep a financially sound America as the best insurance for national security."

When a private concern sells its securities to the public it is required to prove to the Securities & Exchange Commission that it is disclosing the full truth about its financial condition, from which the soundness of its management may be judged.

It is highly improbable that the SEC would approve of new bond selling by an organization already spending beyond its income and whose managers were clamoring for more expansion.

The representation that the way to a "financially sound America" is in the sale of bonds, rather than in prudent management of resources, is impudent hokum. U. S. bonds are a thrifty buy for the average small investor, but not for the reason given by the Treasury.

That there is some recognition of the fact that the federal government cannot go on indefinitely extending the scope of federal taxes and withal spending more than its income is indicated by an editorial which appeared June 20, 1949, in the *Washington Daily News*. Reference is made to a speech made June 18 by James F. Byrnes at Washington and Lee University in Virginia. Besides being a former senator from South Carolina and member of the Supreme Court he was appointed Secretary of State by President Truman two months before V.E. Day. He said in part:

"Every segment of society is demanding special privileges. Too many people want more pay for less work. Too many people are trying to transfer power to the government.

"We are not only transferring too much power from the individual to the government, but we are transferring too many powers of state governments to the federal government.

"Where we will wind up, no one can tell. But if some of the new programs seriously proposed should be adopted, there is the danger that the individual, whether farmer, worker, manufacturer, lawyer or doctor, soon will be pulling an economic oar in the galley of the state "with" the federal government regimenting our lives from the cradle to the grave.

"Our first line of defense is a sound, solvent American economy. The only wise course is to reduce expenditures and live within our means."

And he went on to advocate that government spending for purposes other than fixed obligations and national defense should be cut or deferred. This from the man who was most effective in steering New Deal measures through Congress during President Roosevelt's administration is the more remarkable and merits serious consideration.

We urge every reader to write to each member of the House Ways and Means Committee listed below, voicing his disapproval of the proposed extension of

Social Security to include the self-employed. Personal letters count fully as much as society resolutions.

Democrats	*Republicans*
Robert L. Dougton, N. C.	Daniel A. Reed, N. Y.
Jere Cooper, Tenn.	Roy O. Woodruff, Mich.
John D. Dingell, Mich.	Thomas A. Jenkins, Ohio
Wilbur D. Mills, Ark.	Richard M. Simpson, Pa.
Noble J. Gregory, Ken.	Robert W. Kean, N. J.
A. Sidney Camp, Ga.	Carl T. Curtis, Neb.
Aime J. Forand, R. I.	Noah M. Mason, Ill.
Herman P. Eberharter, Pa.	Thomas E. Martin, Iowa
Cecil R. King, Calif.	Hal Holmes, Wash.
Thomas J. O'Brien, Ill.	John W. Byrnes, Wis.
J. M. Combs, Texas	
Hale Boggs, La.	
John A. Carroll, Colo.	
Stephen M. Young, Ohio	

CHLOROMYCETIN

CHLOROMYCETIN, a crystalline substance derived from liquid cultures of a certain species of streptomyces, has proven to be a valuable addition to the list of antibiotics. The mold was first obtained by Dr. Paul R. Burkholder of Yale from a specimen of soil from Venezuela, and an extract was found to have antibacterial properties. The mold was referred to Parke, Davis and Company where the crystalline form was isolated by Drs. I. R. Bartz and John Erlich and named chloromycetin.

The crystalline chloromycetin is relatively insoluble in water but is well absorbed from the gastrointestinal tract and is well tolerated orally. Found to have rickettsiostatic properties when tested in infected chick embryos, the new antibiotic was found by the Army to be highly efficacious not only against epidemic typhus but also against the rickettsial agents of murine typhus, spotted fever, Q fever, rickettsial pox and several viruses of the psittacosis-lymphogranuloma group. It has also been found to be of value in brucellosis, but not in typhoid fever.

While endemic typhus is not common in the northern part of our country it does occur with some frequency in the South. The epidemic form of typhus is of serious importance in many parts of the globe and in areas where thousands of our troops still are located. Up to the present there has been no known remedy for the disease. DDT proved invaluable during World War II in the prevention of typhus, and vaccination was doubtless of value. The Army is undertaking trial of synthetic chloromycetin on natives in order to ascertain whether it is as effective as the mold derivative.

In recent years it has been found that the disease known as Rocky Mountain spotted fever is not limited to the Northwest; it is not uncommon in the East, Mexico and South America. The name "spotted fever" is therefore more logical. Vaccination, while of value, is of short duration and requires yearly administration. While para-aminobenzoic acid has proven to be of some therapeutic value in this disease, treatment on the whole has been unsatisfactory. Chloromycetin has proven highly effective in the treatment of this disease.

NEW YORK COUNTY MEDICAL SOCIETY AGAIN REVERSES STAND

WE MADE editorial comment in our May issue of the opposition of members of the New York County Medical Society to the $25 assessment and the twelve-point program of the AMA. While in January the majority voting favored the assessment, a later vote showed 432 against and 333 for the assessment out of a total membership of nearly 6,000. Evidently the "agins" turned out in force, for at a later meeting on March 28 with a "huge attendance," the vote showed an overwhelming approval of the assessment and the present policies of the AMA.

That there would be no dissenting voice among the 140,000 physicians in the county on any proposition would be too much to expect. Those who believe that the advantages of the socialization of our economy, including the medical profession, outweigh the disadvantages cannot in all probability be converted. We wish that all such could have had the opportunity of hearing the two Englishmen who addressed the National Conference of County Medical Society Officers on June 5 at Atlantic City. The vivid portrayal of what has happened to the medical practice in England as a result of the program of socialization of medical care, which became effective July 1, 1949, would undoubtedly make some converts. These addresses will doubtless appear in print and should be watched for and read by any who are still unconvinced of the importance of avoiding the mistake that England made.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

BRITISH DOCTOR, AUTHOR DENOUNCE SOCIALISM

A British doctor and a British writer analyzed socialism for the benefit of doctors attending two sessions of the American Medical Association's annual convention at Atlantic City, New Jersey.

Dr. Ralph J. Gampell felt so deeply and bitterly about the socialistic distortion of medical practice that he left his native country, applied for American citizenship and is interning in California to qualify for a license to practice medicine in this country.

In tracing the gradual encroachment of socialistic doctrines, Gampell told county medical society officers the answer to the ever-recurring question of "Why didn't the English doctors do something?"

In the first place, Dr. Gampell pointed out, medical public relations were very bad. "In fact, public relations, vis-a-vis, were nonexistent."

Pledged to Silence

Secondly, and adding to the debacle, the doctors signed a so-called "security pledge" which enabled the government to keep from the public developments in the move to socialize medicine until four months before the beginning of the program.

Finally, according to Gampell, "British medicine had no alternative."

He explained this statement in economic terms: For nearly forty years a government program to provide medical care on a tax-paid basis had been growing steadily. At first the program included manual laborers whose wages equalled $1,200 a year. The income limit was increased to $2,200 and, of course, last year, the plan was expanded to take in virtually every British citizen. With this ever-increasing bulk of panel patients, the monetary value of a doctor's practice rose or fell according to its panel component. According to the British custom of buying and selling practices, loans up to 100 per cent could be made to buy a practice that had, say, a 50 per cent panel component.

When socialized medicine was announced, doctors were forced by what Gampell termed "bitter economic compulsion" to sign the agreement, for the doctors were faced with the loss of their panel patients, as well as the loss of their investment in a practice. Government spokesmen craftily announced that there would be no more buying and selling of practices, *but the government would reimburse those doctors who signed up to practice medicine according to the new program.*

Trap Was Economic

The doctors held out until the eleventh hour, Gampell declared, then they capitulated for they had no strength—no unity in the profession, no hope of arousing public sentiment and no financial means to break through the toils of the government's ingenious, dollar-baited trap.

Describing the aftermath of this legislation, Dr. Gampell said, "I have *dealt* with twenty patients in an hour and made thirty-six house calls in a day. If that is medicine, then we're not doctors."

From the standpoint of a layman, albeit a highly specialized, trained observer, Cecil Palmer of London told of the impact of socialized medicine on the British physician and his patient.

"Socialized medicine has revolutionized the status of the doctor and destroyed the relationship between doctor and patient," he stated flatly.

No Privacy Left

Indicative of the way government medicine operates, he believes, is the manner in which private case records became public property:

"A statutory instrument was issued by the Minister of Health three weeks after his promise of privacy and secrecy, requiring records of diagnosis and treatment of all patients to be made available to local lay councils."

Scoring the propaganda that urged free medi-

cal care for "the common man," Palmer declared, "I don't believe a common man exists."

"The program has tried to strengthen the weak by weakening the strong, and the people of England are now contributing two million, eight hundred thousand dollars a week for *free* medical care."

The quality of this medical care was also a target of the British newspaperman's criticism. "It is not possible to give more than five minutes for the diagnosis and treatment of any one patient."

WHITAKER AND BAXTER REPORT PROGRESS

Speaking before the Medical Societies Executives Conference, June 8, at Atlantic City, Leone Baxter, general manager of the AMA's national education campaign, said:

"The doctors of America, by taking their case direct to the people in a co-ordinated, nationwide move, have scratched the surface of an adverse, or at least an apathetic, public sentiment—a sentiment which proponents of compulsory health insurance have built and nurtured for years."

"The pattern of your national campaign to get the facts to the people has four main facets," she stated. "Distributing literature carrying medicine's story, organizing and directing speakers' bureaus, originating valid news stories and securing endorsements from public organizations respected for their views."

"Forty great national organizations, encompassing millions of members, have studied the facts and taken formal action against compulsory health insurance," said Miss Baxter, listing as examples, the American Legion, the General Federation of Women's Clubs, the National Grange, the American Farm Bureau Federation, the American Bar Association, the D.A.R., the National Fraternal Congress, the United States Chamber of Commerce and the National Association of Small Businessmen.

"The first emergency is over, because the Truman forces decided to bench their ball carriers for the season," Miss Baxter summarized. "But anybody who thinks that medicine may now relax in the bleachers simply caught the wrong signal! The backfield already is in motion—far ahead of time. The compulsory health insurance advocates announce they are going to make this issue a *major* issue in the coming congressional campaigns throughout the United States. They frankly admit that they need to do some groundwork in the congressional districts before they can afford to propose such a bill again."

FILDES PAINTING TO SHOW UNITY

American doctors have been asked to display the famous Fildes painting of "The Doctor" in their offices, as part of the AMA national education campaign.

Portraying as it does the intangible, but nonetheless valuable, relationship of doctor and patient, the painting has a further significance, it was revealed at the Atlantic City convention. By displaying the poster, American doctors will demonstrate, beyond question, their participation in the struggle against socialization and their unified belief in the freedom of medical practice.

The painting, chosen to keynote the educational campaign, shows Sir James Clark, personal physician of Queen Victoria, caring for the child of a forester in the Queen's service near Balmoral Castle, North Scotland.

Fildes said of his painting: ". . . an attempt to put on record the status of the doctor, than whom no more noble figure could be imagined—the grave anxiety of the doctor, and the faith of the parents who, almost overcome with dread, stand in the background, trusting the doctor even when their hearts failed."

TELEVISION AIDS SCIENTIFIC PROGRAM

AMA convention goers, who at the St. Louis session saw operations televised, witnessed another dramatic development in video science at Atlantic City. This time surgical, diagnostic and other medical procedures came on the screen in natural color.

Television was also put to work interpreting x-ray films, thereby increasing the usefulness and accuracy of roentgenograms.

Doctors saw a combination of new techniques when, by television, they observed the use of radioactive isotopes in treating patients. Progress of the isotopes through the body was tallied by means of Geiger counters.

Television programs for the convention were transmitted over a closed circuit, making it impossible for the public to "tune in."

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota

Julian F. DuBois, M.D., Secretary

Minneapolis Laundry Driver Pleads Guilty to Violation of Basic Science Law

Re State of Minnesota vs. Ralph W. Walsh

On June 20, 1949, Ralph W. Walsh, forty-six years of age, 2601 Fourth Avenue South, Minneapolis entered a plea of guilty in the District Court of Hennepin County to an information charging him with the crime of practicing healing without a basic science certificate. Walsh was arrested on June 17, 1949, following an investigation by Minneapolis police officers under the direction of Inspector Eugene Bernath. Information had been received by the Police Department that Walsh had stated that he was available for the performing of abortions. An appointment was made with Walsh by detective Don Johnson and policewoman Adelaide Noffke. The parties met at a loop hotel where Walsh offered to perform an abortion for $75. He had in his possession, at the time, instruments for the performing of an abortion, sulpha tablets and other medicinal preparations. He was immediately arrested and placed in the city jail.

Walsh stated that he drove a laundry truck and for eighteen years had worked for a Minneapolis linen supply firm. Part of the time Walsh had the route that included the Medical Arts Building. He denied that he had attempted to perform any abortions prior to the case in which he was arrested. He stated he wanted to make a "little easy money" and thought this was the way to do it. His career as an abortionist was nipped in the bud through the efficient work of the Minneapolis Police Department. Walsh was sentenced by the Hon. Arthur W. Selover, Judge of the District Court, to a term of one year in the Minneapolis Workhouse, the sentence being suspended and the defendant placed on probation for one year. Judge Selover denounced the defendant for his activities and warned him of the danger of the work that he was about to engage in. Upon being questioned by the Court, Walsh stated that he was born in Minneapolis in 1903, and lived there all his life. He stated that he had always been in the laundry business and had no training in medicine. Walsh stated to the Court that he was glad that he was arrested and that he had been pretty nervous about the whole affair.

ALL BABIES NOW GET "BIRTH NUMBERS"

In Minnesota, as in every other state, all babies born on or after January 1, 1949, now receive an identifying "birth number," the Division of Vital Statistics announces.

The new national plan for numbering birth certificates will give every American-born child a single identifying number for reference during his life. To illustrate: The first child born in Minneapolis on January 1, 1949, has the birth number 122-49-000001. The first figure 1 designates the United States, the 22 indicates Minnesota. This first section of the whole number was assigned by the National Office of Vital Statistics, which has arranged the states and the District of Columbia alphabetically. The figure 49 refers to the year of birth.

The third part of the birth number, consisting of six digits, represents the consecutive number of births occurring in the state. Blocks of serial numbers have been assigned to Minneapolis, St. Paul, Duluth, and each of Minnesota's eighty-seven counties. Goodhue County, for instance, has the series 131001-133000. A child born in Goodhue County during January, 1949, might have as his birth number 122-49-131005.

Number Gives Identification

This system will make it possible to determine, from a person's birth number, the country, state, county, and year of birth for that person. Each baby will have his own individual number, and no two will have the same number. Therefore, the birth number will serve as a means of identification.

The birth number system was recommended by the American Association of Registration Executives and the Association of State and Territorial Health Officers. The natioinal agencies now employing serial numbers, such as the Social Security Administration and the Office of Defense, have indicated that they will accept the new plan and discard their old numbering systems, if the plan proves satisfactory in the states. All states adopted the new system as of January 1, 1949, and some states are even adapting it to births occurring before that date.

Each child's identifying number will appear on his birth certificate, which is required for school entrance, working papers, automobile licenses, entrance into military service, marriage, insurance, and Social Security benefits. It is possible that in future the birth number will also appear on a person's Social Security card, driver's license, and other identifying items.—*Minnesota's Health*, March, 1949.

INGUINAL AND FEMORAL HERNIA OPERATIONS

(Continued from Page 701)

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Minnesota Academy of Medicine

Meeting of March 9, 1949

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, March 9, 1949. Dinner was served at 7:00 p.m., and the meeting was called to order by the President, Dr. J. A. Lepak, at 8:25 p.m.

There were forty-eight members and two guests present.

Minutes of the February meeting were read and approved.

The President announced there would be election of new members at the April meeting. The scientific program followed.

Dr. Martin Nordland, Minneapolis, reported two cases concerning gastric resection for carcinoma.

Dr. Vernon L. Hart, Minneapolis, presented a paper illustrated with lantern slides and a motion picture.

RESECTION OF STOMACH FOR CARCINOMA

Report of Two Unusual Cases

MARTIN NORDLAND, M.D., and MARTIN A. NORDLAND, M.D.
Minneapolis, Minnesota

Case 1.—Mrs. A. S. was an elderly appearing, frail, sixty-four-year-old white woman who came in with the complaint of epigastric distress post cibum, becoming progressively worse for the past twelve months. Associated with this, she complained of decrease in appetite, and a tendency to constipation. She was sleeping poorly and had lost about 12 pounds in weight in the last year. In addition to this, she had noticed an increased bloating, which if severe enough caused abrupt vomiting of clear mucus, not associated with nausea. There was no history of jaundice, hematemesis, or melena.

Past History—Past health had been excellent. There was no history of serious illness, injury, or previous surgery. Systemic review was negative.

Physical Examination—Physical examination revealed an elderly white woman who appeared quite ill. There was no abnormality of the head, neck, or chest. The heart did not appear to be enlarged, but a faint low-pitched systolic murmur was present at the apex. Blood pressure was 160/80 and the pulse was 120. There was a definite mass palpable in the left upper quadrant which was slightly tender. No other organs or masses could be palpated. Rectal examination was negative, as well as examination of the extremities.

Laboratory Studies—Urinalysis was negative; hemoglobin, 12.9 gms. per cent; sedimentation rate, 53 mm. in 60 minutes; blood urea nitrogen, 9 mg. per cent; carbon dioxide combining power, 59 vols. per cent; chlorides, 620 mg. per cent.

X-ray examination of the stomach showed an infiltrative lesion along the lesser curvature in the middle third of the stomach, with associated ulceration. The lesser curvature was somewhat stiffened due to a mass in this area. There was a duodenal ulcer deformity (Fig. 1).



Fig. 1. X-ray of the stomach showing a lesion and filling defect from pressure of a palpable mass.

The patient came to operation on October 26, 1948, at which time a total gastrectomy with an esophagoduodenostomy was done. At the same time, a large cyst was removed from the tail of the pancreas; and, in doing the procedure, it was found necessary to remove the spleen because of the mechanics of the procedure involved.

The stomach contained a pale, hard ulcer, 5 by 5 cm. and 3 mm. deep, on the proximal portion of the lesser curvature, bordering the proximal line of resection. There was a shallow, less indurated ulcer, 4 by 4 cm., on the middle third of the lesser curvature of the stomach. This appeared to be separated from the main tumor by about 2 cm. of grossly normal mucosa. The large ulcer was a tumor that was 10 to 12 mm. thick on section and was firm and white. It extended through to the serosa and made it pale and puckered. Several pink lymph nodes up to 10 mm. in diameter were present in the fat of the lesser curvature near the tumor, but they appeared grossly benign. The spleen, weighing 190 gm. and appearing grossly normal, was also present. In the portion of the pancreas removed, there was a cyst, 6 by 7.5 by 5 cm., that had a tough fibrous wall 1 to 2 mm. thick and was filled with a grey semisolid material. On the outer surface of the cyst wall, there was a patch of pancreatic tissue 8 by 6 cm. and up to 8 mm. in thickness.

The microscopic specimens revealed the ulcerated tumor of the stomach to be a scirrhous carcinoma. The spleen was found to be normal. The pancreatic tissue suggested a true cyst of the pancreas which was undergoing malignant change, and the tumor was very different in appearance from that of the stomach, inasmuch as the pancreatic tumor was forming very definite glands.

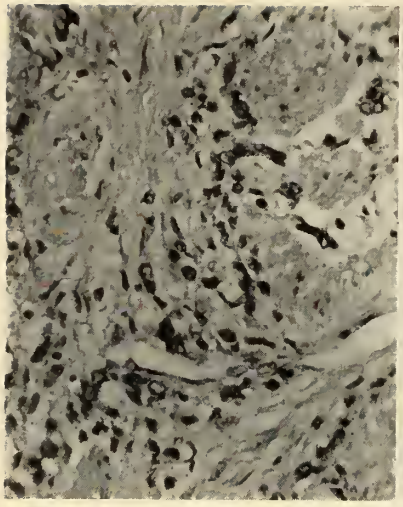


Fig. 2. Microscopic section of the lesion in the stomach.

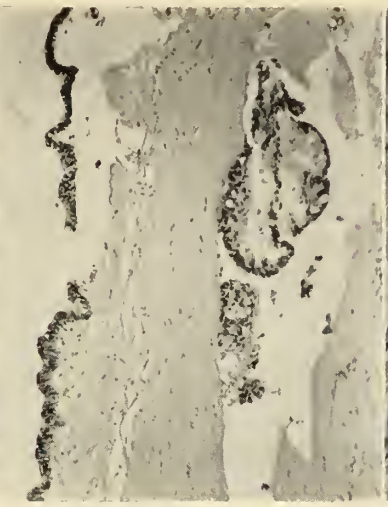


Fig. 3. Microscopic section of the lesion in the pancreas, showing the cyst wall and beginning overgrowth of glandular structure.



Fig. 4. Microscopic section of the lesion in the pancreas, showing carcinomatous invasion of the lesion.



Fig. 5. Postoperative x-ray showing peristalsis in the esophagus immediately above the anastomosis, a pocket formed by extravasation from a leak at the anastomosis, and a diverticulum of the duodenum.

Final pathological tissue report revealed adenocarcinoma (scirrhous) of the stomach, grade 4, with metastases to regional lymph nodes, pancreatic cyst with adenocarcinoma, grade 3, and spleen (Figs. 2, 3 and 4).

The patient's postoperative course was relatively uneventful, and she was able to resume her duties as a housewife after an interval of approximately two months. Her ultimate prognosis is hopeless; but at the present time, she has shown no appreciable deterioration (Fig. 5).

Comment

This case is of interest because of the presence of multiple primary carcinomata in the same patient: (1) adenocarcinoma (scirrhous) of stomach, grade 4; (2) adenocarcinoma of a true cyst of the pancreas at junction of body and tail.

The most common cyst of the pancreas is not a true cyst. The common cyst has no epithelium, has a rigid lining and contains a mass of necrotic pancreatic tissue. This is usually the residue of a pancreatitis from which the patient has recovered or is the result of trauma.

The cyst of the pancreas in this case was a true cyst, lined by columnar cells, the same as found in infants. While these rare cysts in adults are usually benign, this one had one small area of malignant change. Ninety per cent of carcinoma of the pancreas occurs in the head, causing a solid jaundice.

It is seldom possible to unite the esophagus to the duodenum in a total gastrectomy. Due to the mechanical factors present in this case, it was possible to do this in this patient with a very satisfactory result.

Case 2.—Mr. L. K. was a forty-nine-year-old white man who went to his local physician on October 1, 1948, for a routine physical checkup. He had been in excellent physical health with the exception of occasional slight abdominal cramping after meals. This was noted especially with rich and fried foods. There was no history of weight loss, nausea, vomiting, or bowel disturbance.

In the course of the checkup, physical examination was essentially negative; but, in view of the minor presenting complaint, an x-ray of both the gall bladder and stomach was done. The gall-bladder x-ray was normal. However, during fluoroscopy there was noted a fairly large polypoid type of defect on the posterior wall of the stomach in approximately the middle third. The lesion was quite constant in appearance and was strongly suggestive of a fairly large polypoid tumor, probably a polypoid carcinoma. The lesion extended from a point just below the incisura up to a point about 2 inches below the esophageal orifice and involved chiefly the posterior wall. The lower third of the stomach was normal. A barium enema was normal.

Past History.—The patient had had a tonsillectomy in 1938, diphtheria as a child, the usual childhood diseases and a minimal arthritis of the lumbar spine for the past several years. There was no history of carcinoma in the family.

In view of the results of the stomach x-rays, which were reviewed by other roentgenologists, the patient was urged to have a gastric resection (Fig. 6).



Fig. 7. Microscopic section through a sessile polyp—low power.

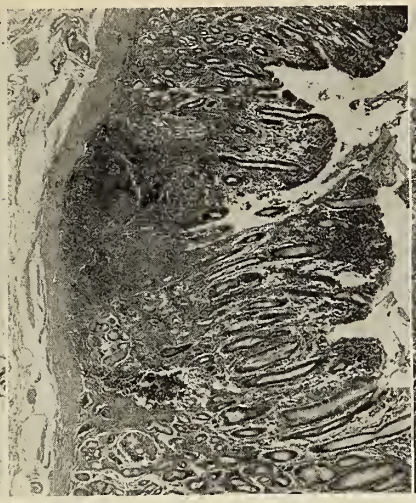


Fig. 8. Microscopic section showing hemorrhagic gastritis in the region of the polypi—higher power.



Fig. 9. Microscopic section showing mucous gland cells in the gastric mucosa.

The patient came to operation on October 13, 1948, and about 85 per cent of the stomach was resected. On opening the abdomen, no gross evidence of metastases could be found in the liver or the proximal glands. The tumor described on x-ray could not be palpated grossly through the stomach wall, and there was no evidence of any metastases in the peritoneal cavity. A posterior polya type of resection was carried out without incident.

The macroscopic report by the pathologist of the specimen revealed "the mucosa of the pyloric canal to be of average appearance and thickness. However, the mucosa of the upper three-fourths of the specimen was tremendously hypertrophied and thrown into tall closely packed wide rugae, whch could not be stretched out. There were about ten small sessile polypoid-like lesions from 4 to 8 mm. wide and 1 to 3 mm. high on the tops of some of the prominent rugae. There were no pedunculated polyps. There were no indurated areas suspicious of malignancy."

The microscopic report by the pathologist revealed "the mucosa of the pyloric canal to be moderately infiltrated with lymphocytes but not atrophic. The mucosa of the fundus also showed a diffuse lymphocytic infiltrate of moderate degree. The polypoid lesions were largely due to numerous microscopic cysts in the gastric glands. Nothing suggestive of malignancy was seen."

The final pathological tissue report was that the stomach had severe chronic hypertrophic gastritis and multiple polyps (Figs. 7, 8 and 9).

The postoperative convalescence was uneventful except for a short period immediately after operation of the "dumping syndrome" which receded without incident. At the present, the patient is in good condition.



Fig. 6. X-ray of the stomach preoperatively.

Comment

This case was thought to be of unusual interest because of (1) the preoperative diagnosis of carcinoma by two competent roentgenologists, (2) the findings at operation, and (3) the findings of a benign lesion by the pathologist.

As stated above, the fluoroscopy revealed a fairly large polypoid type of defect on the posterior wall of the stomach in approximately the middle third. The lesion was quite constant in appearance and was strongly suggestive of a fairly large polypoid tumor, probably a polypoid carcinoma. The lesion extended from a point just below the incisura up to a point about 2 inches below the esophageal orifice and involved chiefly the posterior wall. The lower third of the stomach was normal.

No evidence of metastases could be found in the open abdomen. The tumor described on x-ray could not be palpated, and grossly the entire stomach appeared to be normal. Only upon opening the stomach could a polypoid lesion be felt.

The report given by the pathologist was benign hypertrophic gastritis with polypoid lesion due to numerous microscopic cysts in the gastric glands. These were sessile, polyp-like lesions, which differ from true polyps in that there is no new gland formation. True polyps of the stomach which are potentially malignant are not as serious as the same lesions in the colon. The type

of hypertrophic gastritis found here with polypoid lesions differs from the ordinary hypertrophic gastritis in that the tissue cannot be "stretched."

Discussion

Dr. Owen H. Wangensteen, University of Minnesota: The case histories of these two patients which Dr. Nordland has presented in such an interesting manner are unusual. With reference to Dr. Nordland's first patient, the most pressing question is: what is the relationship, if any, of the gastric to the pancreatic neoplasm? It is distinctly unusual that Dr. Nordland's patient should have survived total gastrectomy in the light of the circumstance that a large fistulous tract communicated with the anastomosis. On that score, I would like to say that I once was very sensitive over my mortality in total gastrectomy. This was almost twenty years ago. Unfortunately, some of my colleagues were even more troubled over it than I. In consequence, it was a difficult period for them as well as for me. Time, the great artificer and healer, takes care of most things, however. And it is surprising how the hurts and disturbances of yesterday, when viewed from the broader perspective of today, seem far less important.

In the intervening years, my colleagues and I have learned to do total gastrectomy with an operative mortality which begins to rival that of subtotal gastrectomy for cancer. Whereas twenty years ago, in the experience of the leading exponents of gastric surgery of that time, the mortality of total gastrectomy was approximately 50 per cent, the situation is much better today. With some minor modifications in the technique of performance of the procedure, my colleagues and I (eight surgeons) did twenty-eight total gastrectomies over a two-year interval with one hospital death (3.5 per cent mortality). An esophagojejunal or esophagogastric anastomosis is the only anastomosis in the alimentary tract which must be done by the open method; the reason is that esophageal mucosa may retract, and if the mucosa retracts from the edge of the tissues apposed when the suture is made, it is obvious that a stricture may form.

Concerning operations on the pancreas coincidental to operations upon the alimentary tract, some points might be emphasized. An air vent suction drain of the Pump or Chaffin variety should be placed down to the splenic bed. My colleague, Dr. Ivan Baronofsky, has shown that the fluid collection is pancreatic in origin. In other words, in splenectomy, it may be virtually impossible to separate the pancreatic tail from the hilum of the spleen without causing a temporary pancreatic fistula. Moreover, this circumstance may be responsible for the febrile episodes which now and then accompany simple splenectomy. My associate, Dr. John Lewis, has the impression from some work which we have been pursuing jointly in the laboratory that the generous parenteral administration of penicillin may be the best therapeutic agency with which to thwart the potentially serious consequences of acute pancreatic necrosis. At least in the dog, in which the injection of bile into the pancreatic duct is the activating agency, this appears to be true.

With reference to Dr. Nordland's second case, much could be said. The pathologist's diagnosis of multiple polypi certainly justifies partial gastrectomy as Dr. Nordland carried it out. Gastric polypi are precursors of cancer but probably not as quick precursors of malignancy as are colic and rectal polyps. At the moment, we are trying to assess this factor in a number of patients with polyps and achlorhydria now under observation in a "Gastric Cancer Precursor Group Study," under way at the University Hospitals.

If we surgeons are going to make a more indelible impress upon the subject of gastric cancer than we have, it must be through the agency of earlier diagnosis. We can now bring the larger number of patients with gastric cancer submitted to operation safely through the ordeal. What we must learn to do is to recognize gastric cancer earlier than we do. Increasing experience is teaching all of us that visceral cancer is silent in its early phases. In other words, it is not enough to be on the lookout for early symptoms alone. No, we must be scrutinizing patients who may unknowingly harbor the disease. The sident interval in gastric cancer, during which the villain lurks there without causing symptoms, is probably from fifteen to twenty months. We know that from the case histories of patients undergoing radical operation for gastric cancer, in whom cancer is detected by the pathologist in the proximal line of resection on careful microscopic study of the excised tissues. Obviously, such patients should be submitted to early reoperation. Moreover, in Borrman IV types of gastric cancer, total gastrectomy should be carried out more frequently than it is now.

We know that the presence of lymph node metastases decreases considerably our opportunity of curing cancers of any kind. On that score, in patients presenting lymph node involvement in malignancies of the stomach and colon, in which we feel that we have done an otherwise complete operation, I have been suggesting to my colleagues that we re-enter the abdomen after an interval of approximately four months to do a "wiping-up" operation. In other words, a Dukes' Group C lesion, like the patient with microscopic cancer in the proximal line of resection, should be looked upon as harboring residual cancer which is incubating and growing slowly. The reassertion of clinical symptoms in such patients may not be expected for another fifteen or twenty months.

The tragedy of the situation is that early gastric cancer is difficult to diagnose and easy to cure, whereas the late gastric cancer is very easy of recognition but very difficult to cure.

Dr. Leo Rigler, University of Minnesota: I was most intrigued by Dr. Nordland's second case as it illustrates a problem that we have been confronted with many times. I am not clear as to what he decided the second case was. I would say, from the first slide, that it was the condition called "giant rugae." So far as we know, they are not neoplastic in nature, although it has been reported that papillomata become superimposed on these. In the series of symptomless patients on whom we did routine examinations, we ran into this three times, and the problem of differentiation from carcinoma or polyposis was very difficult. I have seen at least four patients who have been sent to Dr. Wangensteen from various places for an operation for carcinoma of the stomach, none of whom had carcinoma—merely these giant rugae. The distinction can be made but it is not an easy one. There may be hyperplastic mucosa overlying these large folds which are almost invariably seen on the greater curvature of the stomach, usually without specific symptoms.

We feel very strongly that polypi in the stomach become malignant, but this thesis is almost impossible to prove. If the tumor is removed and it is benign, malignancy cannot develop. If it shows malignant cells, there is no way of proving that these were not present from the beginning. Some patients may live for ten or fifteen years and nothing happens. The lesions remain the same, but one never knows which ones are going to remain benign and which ones will become malignant. I just saw a patient the other day at the Veterans Hospital. He had pernicious anemia, no gastric symptoms, but routine x-ray examination was done. A tumor thought to be a benign polyp both roentgenologically and gastroscopically was found. At operation it proved to be a carcinoma *in situ*. The relationship of giant rugae to carcinoma is not well established, and we would be inclined to follow the patient for a time.

Dr. Moses Barron, Minneapolis: It is well to remember that these giant rugae are not very likely to become malignant. It is, therefore, important to establish the diagnosis of hypertrophy of the rugae and not confuse it with extensive carcinoma which it sometimes resembles in the x-ray. These patients may go to a chiropractor who may cure them with celery or other vegetables after a physician has made a diagnosis of an inoperable carcinoma. Exploratory operations are therefore indicated in these patients. I saw one with such a condition at St. Mary's Hospital in whom a diagnosis of extensive carcinoma of the stomach had been made from an x-ray and who at operation proved to have perfectly benign giant rugae.

Dr. Nordland (in closing): I am very thankful to the gentlemen for their discussions. The case with the polypoid disturbance of the gastric mucosa illustrates the difficulty encountered in the preoperative diagnosis. While the patient may have continued in relatively good health, Dr. Barron has pointed out a good reason for surgical interference. An important observation in this case was the fact that with the abdomen open, a thorough palpation of the entire stomach revealed no evidence of a lesion. This illustrates that we cannot always depend upon the judgment of the surgeon, and how much we depend upon the findings of the roentgenologists.

The second patient, with two distinct types of carcinoma, illustrates the increased safety of extensive surgery in the aged sick. Possibly without the aid of antibiotics it would have been difficult to do a total resection of the stomach, uniting the esophagus to the duodenum, excising a portion of the pancreas, and removing the spleen.

CONGENITAL DISLOCATION OF THE HIP

Early Recognition and Treatment During the First Six Months of Life

VERNON L. HART, M.D.
Minneapolis, Minnesota

The motion picture which I will present is part of an educational program against the usually late recognition and treatment of congenital dislocation of the hip. My purpose is to encourage the general practitioners, the pediatricians, the roentgenologists and the obstetricians to renew their interest in this serious congenital malformation with dislocation, so that it will be recognized and treated, not late when there is a limp, telescoping and obvious shortening, but early before the function of weight bearing or during the first six months of life. Weight bearing begins with creeping and generally the infant starts to creep during the seventh month. Before the function of weight bearing, displacement of the femoral head from the socket usually is not complete or a dislocation, but is partial or a subluxation.

A fundamental teaching of orthopedics since the time of Nicolas Andry (1658-1742) has been early recognition and early treatment of congenital deformities. All physicians are familiar with the importance of the application of this basic principle in the treatment of congenital talipes, torticollis and other congenital malformations which, either directly or indirectly, are caused by contracture of muscle, tendon and fascia. Most cases of club feet and wry neck caused by contracture can be cured by simple and conservative measures if recognized and treated soon after birth. This statement holds good for congenital dislocation of the hip since it, too, is related, either directly or indirectly, to contracture of muscle, tendon and fascia. Actually, during early infancy and before weight bearing, the only constant and positive clinical finding of congenital hip displacement is caused by contracture of the adductor muscles of the hip (Fig. 4).

Generally, congenital dislocation of the hip is recognized about the age of two years because someone observes that the child walks with a limp. The recognition is very late and, unfortunately, it is often too late for successful treatment. Every child with congenital dislocation of the hip which is recognized at the age of one, two or three years, had positive clinical findings and roentgenological features before weight bearing or during the first six months of life. In fact, the findings were present at birth.

Clinical and roentgenographic findings which may seem insignificant at the age of one, two or three months of life, might become major and serious deformities at the age of two or three years because of the very extreme activity and growth or endochondral ossification of the skeletal structures of the hip joint during this early period.

A prominent pediatrician recently informed me that, although he tested the hip joints of every infant for telescoping, he had never found a displacement of the hip during infancy before weight bearing. He assumed that telescoping of the hip is an early and positive clinical finding. Indeed, it is a positive finding but usually not an early one; it is a very late clinical finding. This physician—like most physicians, I believe—does not understand the pathogenesis of this serious congenital malformation with dislocation. During early infancy this malformation with dislocation is rare; with subluxation, common.

Our concept of the pathogenesis of congenital hip dislocation has changed considerably during the past several years. In fact, the term "congenital dysplasia of the hip joint," with and without displacement of the femoral head from the acetabulum, should be the title of this discussion. Dislocation is a secondary phenomenon and need not necessarily occur. The actual or potential primary malformation is a dysplastic and inadequate acetabulum with an insufficient or aplastic roof or buttress for stability of the head of the femur. Dislocation may or may not emerge as one of the many dysplastic sequelae. Every complete displacement of the femoral head from the socket, or dislocation, at one time passed through a stage of partial displacement or



Fig. 1. Roentgen study of a woman, a school teacher, forty-one years of age, who had no disability of the left hip until at the age of thirty-nine years. I did not appreciate the true etiology until the patient informed me that her sister was disabled with bilateral congenital dislocation of the hips. Previous to this experience I did not understand the relationship between congenital subluxation and congenital dislocation of the hip. This patient's severe pain and disability were the result of osteo-arthritis secondary to the trauma of joint incongruity. Observe (1) the primary flat inadequate dysplastic socket, (2) subluxation, (3) malformation of the femoral head, (4) interruption of Shenton's line and (5) extensive osteoarthritis of the weight-bearing portion of the head of the femur and acetabulum, with bone sclerosis, narrowing of joint space and areas of cystic rarefaction. Congenital subluxation of the hip is a common cause of disability during early adult life. In fact it is the most common cause of arthritis deformans, malum coxae senilis or degenerative hip disease.



Fig. 2. The most convincing evidence of relationship between dislocation and subluxation is found in patients who present positive roentgenographic features of the two entities involving both hip joints. The above roentgen study is of a housewife, thirty-eight years of age. The dislocated hip had caused trouble since childhood. The opposite hip was considered "normal" until the age of thirty-six years, when pain began secondary to osteoarthritis resulting from the traumata of incongruity. This patient's hip joints were never treated previous to her examination.

subluxation during its development. Dysplastic hips form during embryonic or fetal life and, relatively, very few dislocate during intra-uterine life. The great majority of dysplastic hips with displacement of the femoral head are in the stage of subluxation during early infancy or the first six months of life. As a result of weight bearing, abnormal muscle pull and hip joint instability, the subluxated femoral head may continue to migrate and become completely displaced from the acetabulum. Only this situation should be described as congenital dislocation of the hip. Most subluxated hips, without treatment, never dislocate but remain as subluxations throughout the life of the individual and frequently cause no disability until osteoarthritis is superinposed soon after young adult life (Fig. 1). Some individuals, born with hip joint dysplasia, may continue throughout life with a shallow and incompetent acetabulum but with no displacement of the head of the femur and with no complaints until later in life when the trauma of hip joint incongruity produces a traumatic osteochondrosis of the articulation. And, finally, many dysplastic hips either during intra-uterine life or during infancy, return to normal, without treatment, because of the remarkable phenomenon of spontaneous recovery.

Dysplasia, a temporary or permanent, partial or complete, mild or extreme, inhibition and alteration of the normal growth forces of mesodermal tissue, or endochondral ossification, is not limited to the acetabulum but may involve all hip joint structures. Epiphyseal dysplasia should not be confused with aseptic or avascular necrosis of the femoral head. There are several causes of coxa plana; congenital dysplasia of the hip is one of them.

Our knowledge of the etiology and the pathogenesis of this serious hip joint malformation with dislocation is still very incomplete. Only a clear understanding of the newer knowledge will enable us to apply the old but fundamental teaching that congenital deformities should be recognized and treated soon after birth.

1. The true etiology of congenital dysplasia of the hip joint, with or without femoral head displacement, is unknown. Genetic, biological and mechanical influences need further investigations.

2. If a dysplastic and inadequate hip forms during embryonic or fetal life, then there are six possibilities for subsequent development of the joint:

(a) The hip joint may return to normal during intra-uterine life or early infancy, with no treatment, as a result of the remarkable phenomenon of spontaneous recovery.

(b) The dysplastic hip with only a flat socket may persist as such throughout the life of the individual with no displacement of the femoral head from the socket.

(c) The femoral head may be partially displaced from the acetabulum as a subluxation which may persist as such throughout the life of the individual.

(d) Displacement of the femoral head may gradually increase from a partial to a complete displacement or dislocation.

(e) Rarely extreme dysplasia with irreparable malformation of all structures of the hip joint and marked shortening of the shaft of the femur develops.

(f) Coxa plana or epiphyseal dysplasia may be the only expression of hip joint dysplasia.

3. Congenital subluxation is a common entity during the age periods from infancy to late adult life.



Fig. 3. Congenital dysplasia of the right hip joint with slight displacement in an infant of six months. Clinical examination demonstrated limitation of hip joint abduction because of contracture of the adductor muscles, asymmetry of the thigh folds and creases and slight shortening from pelvis to knee.

The x-ray study reveals the following findings of hip joint dysplasia: (1) inadequate bony socket with sloping acetabular roof, (2) delayed development of the center of ossification of the femoral head, (3) delayed closure of the ischio-pubic juncture, (4) slight upward and lateral displacement of the femoral epiphysis or head, (5) adduction attitude of the extremity, (6) mild disturbance of Shenton's line, (7) hypoplasia of the pelvis.

Dysplasia means abnormal growth. Normal growth of the skeletal structure of the hip is by endochondral ossification. Therefore, dysplasia of the hip joint means abnormal endochondral ossification.

4. Congenital subluxation is the precursor of congenital dislocation.

5. Both entities, subluxation and dislocation, frequently affect the two hip joints of a single patient (Fig. 2).

6. Subluxation, like dislocation, is more common in the female.

7. Weight bearing begins with creeping, usually in the seventh month of life.

8. During the first six months of life:

(a) Dislocation is rare.

(b) Subluxation is common (Fig. 3).

(c) All clinical findings are related to contracture of the adductor muscles of the hip (Fig. 4).

(d) Roentgenographic features are present and positive (Fig. 3).

(e) The clinical and roentgenographic findings, which frequently are considered insignificant, may become major, permanent and irreversible at the age of two or three years.

(f) Treatment with the Frejka abduction pillow splint (Fig. 5) is simple, dynamic and effective, and eliminates (1) hospitalization, (2) anesthesia, (3) traction, (4) manipulation, (5) trauma, (6) plaster immobilization, and (7) abduction frames. It prevents (1) subluxation, (2) dislocation, (3) contractures, (4) adhesions, (5) growth malformations of bone and cartilage, (6) aseptic necrosis of bone and cartilage, (7) traumatic osteochondroses, and (8) traumatic osteoarthritis.

9. Educational propaganda is essential.

10. Co-ordinated research should be encouraged.

11. At present there are no valuable statistics of congenital dysplasia of the hip during the first six months of life.

12. The dysplastic hip can be recognized during early infancy by clinical examination. There are several clinical findings, but only one of these is constant and definite. Abduction of the flexed hip joint is limited because of contracture of the adductor group of muscles.

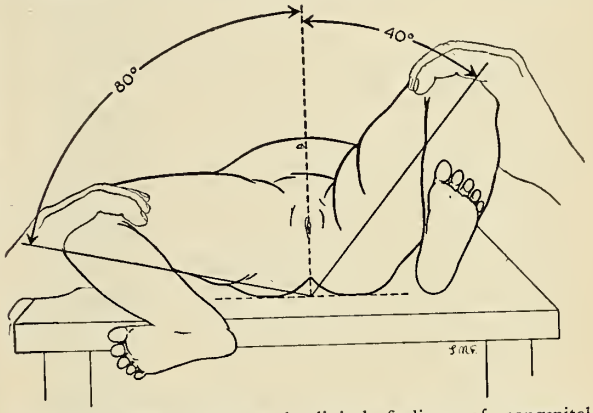


Fig. 4. There are several clinical findings of congenital dysplasia of the hip during early infancy, but only one, limitation of hip joint abduction, is constant and positive. Abduction is limited because the adductor thigh muscles are in a state of contracture. In a normal infant with the hips and knees flexed ninety degrees, the knees may be spread apart and the hips abducted about eighty degrees. The knees almost touch the examining table. Limitation of abduction is an early and constant clinical finding of congenital displacement of the hip joint.

In a normal infant, with the knees and hips flexed 90 degrees, the knees may be spread apart and the hips abducted about 80 degrees. The knees almost touch the examining table. Limitation of abduction is a constant clinical finding of congenital displacement of the dysplastic hip joint (Fig. 4). Shortening from the pelvis to the knee is frequently demonstrated by comparing the knee levels with knees and hips flexed 90 degrees. The shortening may be increased when the knees and hips are flexed because the acetabular defect is often more posterior than superior. This test is not constant and not always positive since it can be influenced by the examiner's enthusiasm. Contracture of the adductor muscles with flexion-adduction attitude of the extremity,



Fig. 5. Treatment of congenital displacement of the hip during early infancy before weight bearing is the secret for improving our results of treatment of congenital dislocation of the hip. Treatment at this early age period prevents dislocation and other serious secondary changes of all hip joint structures. The Frejka abduction pillow splint treatment eliminates hospitalization, traction, manipulation, trauma, plaster immobilization and passive abduction frames. The splint provides active and functional immobilization.

Professor Frejka, of Brno, Czechoslovakia, described this splint at the annual meeting of the American Academy of Orthopaedic Surgeons in Chicago, January, 1947. The main feature of the splint is a pillow which is placed in an envelope-like portion of the splint. This pillow section fits firmly between the thighs. The pillow pressure gradually overcomes the adductor contracture, abducts the hips completely and levers the femoral head to its natural position within the dysplastic socket. The adductor contracture and the limitation of abduction usually are corrected two or three weeks after the splint is applied. The splint is made of twill or mattress ticking. Both white and colored materials are used—blue for boys and pink for girls. The pillow is filled with kapok or feathers. A waterproof material is placed between the splint and diapers.

The mother is instructed in the application of the splint and care of the infant. Examination and roentgen studies are made at the office monthly. The splint is altered as the infant grows. Standing and walking are not delayed. The splint treatment is continued until roentgen study demonstrates an adequate acetabular roof and a stable hip joint. Treatment usually continues over a period of about four months; however, some infants require less and others more time in the splint. The hip joint usually returns to normal because of three factors. (1) spontaneous healing, (2) favorable mechanical and functional stimuli, (3) early treatment before the addition of serious secondary pathological changes.

which is a position of hip joint instability, plays an important role in the production of femoral head displacement from the socket with resulting shortening of the extremity.

Other common clinical findings are extra skin folds and creases or just deeper and more cephalad inguinal and gluteal folds. The asymmetrical skin folds and creases are the result of adductor muscle, tendon and fascia contracture and skeletal shortening from pelvis to knee. They are frequently observed in normal infants also, but their presence should cause suspicion of the hip joint malformation. There is frequently an adduction attitude of the extremity secondary to the adductor muscle contracture of the thigh. Pain, swelling, atrophy, and muscle spasm are absent. A mother may be concerned because of her observation that one knee does not spread as far as the opposite one when changing diapers, that there is a difference in the rotational attitude of the extremities, that the baby powder remains in one unusually deep skin crease, or that a clicking sound is present at the hip level. The great majority of these malformed hips, however, will not be found during early infancy unless the obstetricians, pediatricians, general practitioners, interns, residents, and nurses routinely examine the hip joints during the first days and weeks of life.

The presence of contracture of the adductor thigh muscles, tendons, and fascia, must be emphasized since it is related to all of the clinical findings.

13. Every infant should have this simple examination.

14. Routine mass x-ray studies of all newborn babies without clinical studies would create confusion and should not be encouraged. Co-ordinated clinical and roentgenological studies of large groups of infants at birth and at several intervals during the first year of life should be encouraged in our hospitals.

15. The first diagnosis should be a clinical diagnosis and then confirmed or rejected by proper x-ray study.

16. Congenital dysplasia of the hip during early infancy is primarily a problem of the general practitioners and the pediatricians. Obstetricians may recognize the dysplastic hip immediately after birth.

17. Roentgenologists have an essential part in the academic and in the practical course of this program.

18. The only "secret" to improve the results of treatment of congenital dislocation and subluxation of the hip is early recognition and atraumatic treatment during the first six months of life before weight bearing.

Discussion

Dr. R. T. La Vake, Minneapolis: I would like to ask Dr. Hart whether I could discover this condition at birth?

Dr. Hart: Yes, the clinical findings and the x-ray features are present at birth. The obstetrician should routinely test abduction of the flexed hips by separating the knees. Limitation of abduction may be present because of contusion about the buttocks following breech presentation. The hip joint may be normal but x-ray study should always be made if hip abduction is limited, just to make certain that the hip is not displaced.

Dr. Leo Rigler, University of Minnesota: would you think it worth while to make routine x-rays of the pelvis of all newborns before they leave the hospital?

Dr. Hart: I would discourage a program of routine x-ray studies of all newborns because confusion would result. I certainly would encourage such a program, however, if co-ordinated with clinical examination.

Dr. Rigler: The clinical findings are not common until later. Radiologists would have to learn to interpret the films. It is really more a matter of whether the incidence is sufficient to justify routine examination. How often would you find this abnormality in the newborn population?

(Continued on Page 772)

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requires more strenuous measures. . . . Aminophyllin in doses of 0.25 Gm. dissolved in 10 cc. of water is often very effective when injected intravenously."[1]

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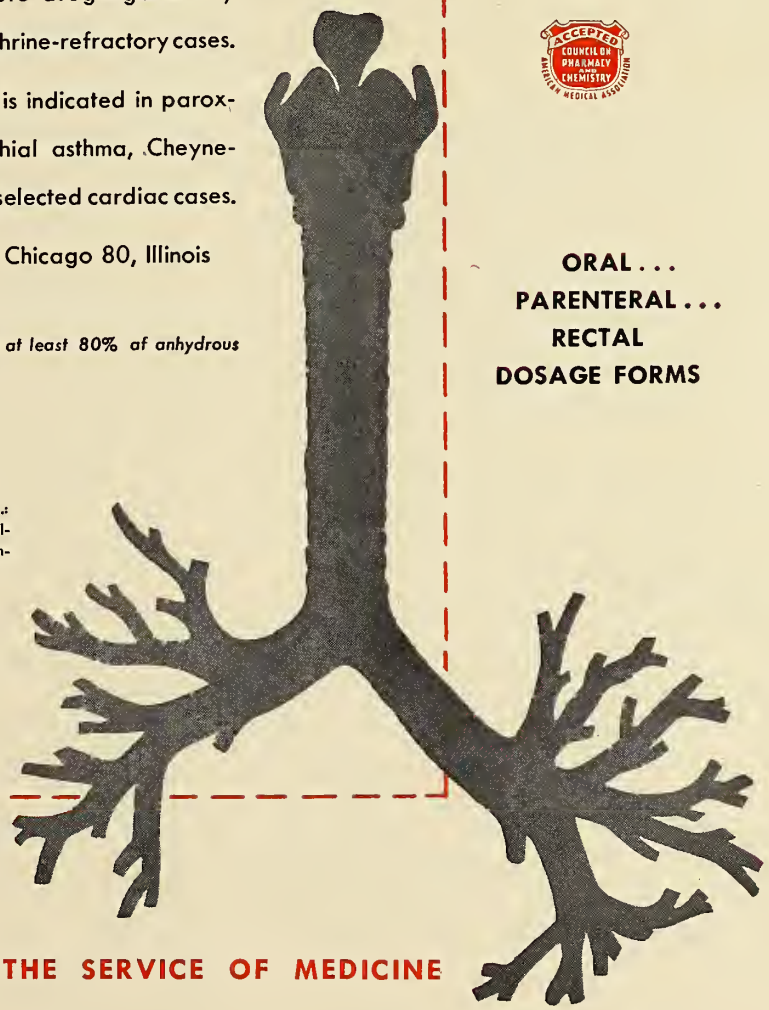
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1. Rackemann, F. M., in Cecil, R. L.: Textbook of Medicine, ed. 7, Philadelphia, W. B. Saunders Company, 1948, p. 539.

SEARLE
RESEARCH IN THE SERVICE OF MEDICINE

✦ Reports and Announcements ✦

MEDICAL BROADCASTS

The Minnesota Department of Health radio schedule for July and August is as follows:

July 4—Let's Have a Safe and Sane Summer
July 11—Polio in Minnesota
July 18—Two Centuries of Vaccination
July 25—Safety on the Farm
August 1—Keeping Babies Well
August 8—The Story of Askov (Dr. Jordan)
August 15—Blood Banks
August 22—Eating Without Regrets (Mr. Adams)
August 29—How Healthful Are Our Schools?

With the exception of the talks on August 8 and 22, these programs will be given by Dr. R. N. Barr, chief of the Section of Special Services. "The Story of Askov" will be given by Dr. W. A. Jordan, director of the Division of Dental Health. On August 22, Harold S. Adams, director of the Division of Hotel and Resort Inspection, will give the talk on "Eating Without Regrets."

AHA PURCHASING INSTITUTE CANCELLED

The American Hospital Association cancelled the summer Institute on Hospital Purchasing. The institute was originally set for July 11 through July 15 at the University of Michigan, Ann Arbor, Michigan.

Less than twenty-five registrations were received five weeks before the institute was to begin, so limiting the administrative budget that it was deemed impractical to continue with the program. In addition, it did not seem feasible to have the outstanding purchasing experts who had agreed to serve as faculty members travel to Ann Arbor to address such a small group.

One Institute on Hospital Purchasing was held from April 18 through April 22 in Washington, D. C. No other purchasing institute is scheduled for 1949.

AMERICAN COLLEGE OF CHEST PHYSICIANS MINNESOTA CHAPTER

At a recent meeting of the Minnesota Chapter of the American College of Chest Physicians, the following officers were elected for the ensuing year:

President, John F. Briggs, M.D., Saint Paul.

Secretary-Treasurer, Karl H. Pfuetze, M.D., Cannon Falls.

At the request of Dr. Hilbert Mark of the State Department of Health, the Chapter decided to establish a speakers' bureau on chest diseases. These speakers will be called upon by Dr. Mark to address county medical society meetings, luncheon clubs and various lay groups regarding the different phases of tuberculosis control work in the state.

The Chapter voted to collaborate with the University of Minnesota in sponsoring a postgraduate course in diseases of the chest which will be held at the Center for Continuation Study on the University Campus next fall.

NORTHERN MINNESOTA MEDICAL ASSOCIATION

The Northern Minnesota Medical Association will hold its annual meeting at Alexandria on September 9 and 10, under the direction of its officers, Dr. R. H. Puumala, Cloquet, president; Dr. W. J. Deweese, Bemidji, vice president, and Dr. C. L. Oppegaard, Crookston, secretary-treasurer.

The program for the two-day meeting is as follows:

September 9

9:00 a.m.—"Epidemic Diarrhea of the Newborn" by Dr. R. O. Bergen, Duluth.

10:00 a.m.—"Applied Surgery of the Stomach, Duodenum and Biliary System" by Dr. C. H. Mead, Duluth.

11:00 a.m.—"A Clinical Appraisal of the Present-Day Methods for the Treatment of Essential Hypertension" by Dr. Howard M. Odel, Rochester.

12:00 noon—Business Meeting.

12:30 p.m.—Luncheon, with the Park Region District and County Medical Society as hosts.

2:00 p.m.—"General Consideration of Carcinoma of the Cervix and Corpus" by Dr. Leonard Lang, Minneapolis.

3:00 p.m.—"The Roentgen Diagnosis of Diseases of the Urinary Tract" by Dr. Harold O. Peterson, Saint Paul.

4:00 p.m.—"Recent Therapeutic Advances in Dermatology" by Dr. Francis Lynch, Saint Paul.

7:00 p.m.—Annual Banquet, at Blake's Hotel.
Presiding: Dr. R. H. Puumala, president, Northern Minnesota Medical Association.
Remarks: Dr. F. J. Elias, president-elect, Minnesota State Medical Association.
Address: The Honorable Edward J. Thye, Senator from Minnesota.

September 10

8:00 a.m. to 12:00 p.m.—"Clinico-Roentgen-Pathological Conference" led by Dr. E. L. Tuohy and Dr. H. G. Moehring, of Duluth.

Woman's Auxiliary

On September 9 at 12:30 a luncheon for the Woman's Auxiliary to the Northern Minnesota Medical Association will be held at the Alexandria Golf Club. In charge of the arrangements will be Mrs. E. R. Sather, Mrs. H. L. Stemsrud and Mrs. C. E. Carlson, all of Alexandria.

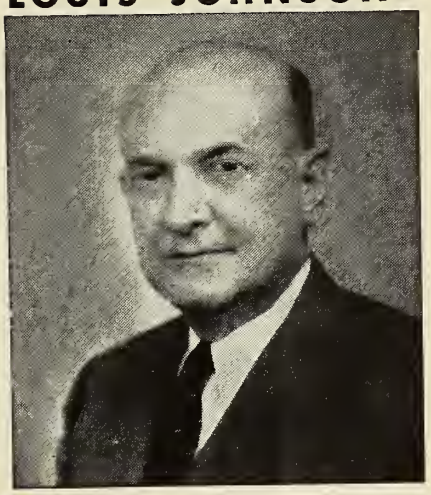
CARDIOVASCULAR GROUPS MERGE

As a result of preliminary steps taken at a meeting in Atlantic City, June 5, 1949, the American Foundation for High Blood Pressure will be merged with the American Heart Association. The high blood pressure

(Continued on Page 756)

FROM SECRETARY OF DEFENSE LOUIS JOHNSON—

AN URGENT APPEAL TO YOUNG DOCTORS!



Your personal help is needed to avert a serious threat to our national security!

By the end of July of this year we will have lost almost one-third of the physicians and dentists now serving with our Armed Forces. Without an increased inflow of such personnel, the shortage will assume even more dangerous proportions by December of this year.

These losses are due to normal expiration of terms of service. The professional men who are leaving the Armed Forces during this critical period are doing so because they have fulfilled their duty-obligations and have earned the right to return to civilian practice.

Without sufficient replacements for these losses, we cannot continue to provide adequate medical and dental care for the almost 1,700,000 service men and women who are the backbone of our nation's defense.

Normal procurement channels will not provide sufficient replacements!

To alleviate this critical, impending shortage of professional manpower in the three services, I am urging all physicians and dentists who were trained under wartime A. S. T. P. and V-12 programs under government auspices or who were deferred in order to complete their training at personal expense, *and who saw no active service*, to volunteer for a two-year tour of active duty, at once!

We have written personally to more than 10,000 of you in the past weeks urging such action. The response to this appeal has not been encouraging, and our Armed Forces move rapidly toward a professional manpower crisis!

Many responses have been negative, but worse—a great number of doctors have not replied. It is urgent that we hear from you immediately!

We feel certain that you recognize an obligation to your fellow men as well as to your profession in this matter. We are confident that you will fulfill that obligation in the spirit of public service that is a tradition with the physician and dentist.

There is much to be said for a tour of duty with any of the Armed Forces. You will work and train with leading men of your professions. You will have access to abundant clinical material; have the best medical and dental facilities in which to practice. You will expand your whole concept of life through travel and practice in foreign lands. In many ways, a tour of service will be invaluable to you in later professional life!

Volunteer now for active duty. You are urged to contact the Office of Secretary of Defense by collect wire immediately, signifying your acceptance and date of availability. Your services are badly needed. Will you offer them?

Louis Johnson

CARDIOVASCULAR GROUPS MERGE

(Continued from Page 754)

group will thus become a section of the American Heart Association's Scientific Council and will be known as the Council for High Blood Pressure Research. Other sections within the Association's Scientific Council now include the Section on Circulation and the American Council on Rheumatic Fever.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The Southern Minnesota Medical Association will hold its annual meeting on Monday, September 12, at Red Wing, Minnesota.

The program for the meeting is as follows:

"Recognition and Management of Urinary Infections in Children"—R. S. RODGER, M.D., Minneapolis.

"Physical Medicine in the Home Treatment of Rheumatoid Arthritis" (45-minute movie)—G. M. MARTIN, M.D., Rochester.

"Vitamin B-12 in the Treatment of Pernicious Anemia"—D. C. CAMPBELL, M.D., Rochester.

"Some Aspects of Pediatric Surgery"—TAGUE C. CHISHOLM, M.D., Minneapolis.

"The Cancer Detection Center at the University of Minnesota Hospitals"—D. STATE, M.D., Minneapolis.

"Maternal and Infant Mortality Study in a Small General Hospital"—R. R. WRIGHT, M.D., Austin.

"Vesicovaginal Fistula—Cured Without Major Surgery" (Case report)—R. C. RADABAUGH, M.D., Hastings.

"A Review of Major Surgical Operations in a Small Hospital"—D. P. ANDERSON, M.D., Austin.

"The Painful Shoulder Resulting From Trauma"—E. H. JUERS, M.D., Red Wing.

"Diagnosis and Treatment of Polycythemia Vera"—CHARLES STROEBEL, M.D., Rochester.

"Congenital Atresia of Esophagus in Infancy. Diagnosis and Treatment" (colored movie)—S. D. MILLS, M.D., Rochester.

All physicians are welcome at the meeting and applications for membership will be considered during the business meeting. Additional information may be obtained from W. A. Merritt, M.D., Secretary, Rochester, Minnesota.

AMERICAN CONGRESS OF PHYSICAL MEDICINE

The twenty-seventh annual scientific and clinical session of the American Congress of Physical Medicine, will be held September 6, 7, 8, 9 and 10, 1949, inclusive, at the Netherland Plaza Hotel, Cincinnati, Ohio. All sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific sessions, the annual instruction courses will be held September 6, 7, 8 and 9. These courses will be offered in two groups. One set of ten lectures will consist of basic subjects and attendance will be limited to physicians. One set of ten lectures will be more general in character and will be open to physicians as well as to physical therapy technicians who are registered with the American Registry of Physical Therapy Technicians.

Full information may be obtained by writing to the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

CONTINUATION COURSES

Anesthesiology

The Department of Postgraduate Medical Education of the University of Minnesota Medical School announces a continuation course in anesthesiology to be held September 12, 13, 14. The course is not intended for full-time anesthetists but is rather directed toward those physicians who spend a portion of their time as anesthetists. Emphasis will be placed on anesthetic agents commonly used by part-time anesthetists. Clinical problems frequently encountered in anesthesiology will be stressed. Distinguished visiting physicians who will participate as members of the faculty for the course include Dr. Stewart Cullen, professor of anesthesiology, University of Iowa Medical School; Dr. John Adriani, director, Department of Anesthesia, Charity Hospital, New Orleans; and Dr. J. S. Lundy, chief of anesthesia at the Mayo Clinic, Rochester, Minnesota. The remainder of the faculty of the course will be made up of full-time and clinical members of the staff of the University of Minnesota Medical School.

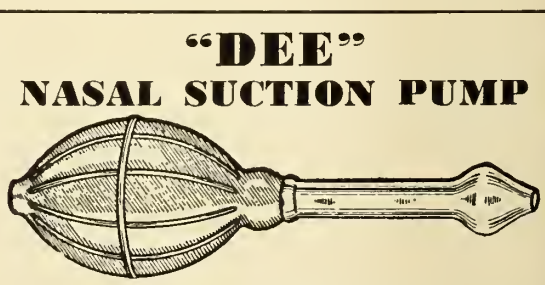
Psychosomatic Medicine

A course in psychosomatic medicine for general physicians will be presented by the University of Minnesota Medical School at the Center for Continuation Study, September 12 to 24. Emphasis will be placed upon interview techniques and the actual care of patients with emotional problems. A major part of the teaching will be done in the Out-Patient Department of the University of Minnesota Hospitals where the registrants will gain clinical experience under the supervision of experienced advisors. Faculty members for the course will include full-time and clinical staff of the University of Minnesota Medical School and the Mayo Foundation.

WASHINGTON SOCIETY

Through an error in type-setting, the name of Dr. E. Sydney Boleyn, secretary of Washington County Medical Society was omitted under the heading Secretary in the County Society Roster published in the May issue. His name does head the alphabetical list of society members in Washington County. Dr. Boleyn was unanimously re-elected secretary of the Washington County Medical Society on December 12, 1948, and we hasten to correct the omission.

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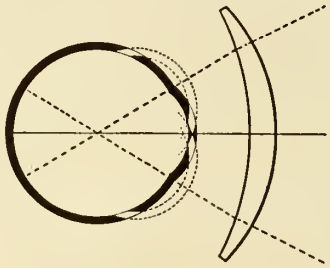
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In Memoriam

JOHN G. ERICSON

Dr. John G. Ericson of Minneapolis died May 14, 1949, at the age of eighty-one.

Dr. Ericson was born in Sweden and came to Minneapolis at the age of sixteen. He obtained his medical degree from the University of Minnesota Medical School in 1892 and specialized in eye, ear, nose and throat diseases. He was associated in practice with his son, Dr. Reinhold M. Ericson, at the time of his death.

He was a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations, the American College of Surgeons, the Swedish Art Institute, the AF and OM and the Zuhrah Temple of the Shrine.

Dr. Ericson is survived by his wife, a daughter, Mrs. Winston E. Sandeen of Minneapolis, and his son.

IGNATIUS J. MURPHY

Dr. Ignatius J. Murphy, a resident of Saint Paul who practiced radiology in Minneapolis and Saint Paul, died June 2, 1949, at the age of sixty-four.

Dr. Murphy was born February 1, 1884, in Victor, Iowa. He obtained his medical degree from the University of Minnesota in 1909, interned at St. Barnabas and Minneapolis General Hospitals and practiced from 1910 to 1915 in Duluth. He was executive secretary of the Minnesota Public Health Association from 1915 to 1919, when he took postgraduate work in radiology at Harvard. He maintained x-ray laboratories in both Minneapolis and Saint Paul. He was a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations.

Surviving are his wife, the former Marion A. McCartin, three sons, Jack, Ned and Gregory, and three daughters, Virginia, Delores and Muriel.

BENJAMIN FRANKLIN SWEZEY

Dr. Benjamin F. Swezey of Buffalo, Minnesota, died at Eitel Hospital, Minneapolis, on June 2, 1949. He was seventy-five years of age.

Dr. Swezey was born in Fremont, Nebraska, on November 1, 1873. He received his medical degree from Keokuk Medical College at Keokuk, Iowa, in 1903 and practiced with a brother in Iowa before coming to Minnesota in 1906. He practiced first in Nassau and Bellingham before locating permanently at Buffalo.

Dr. Swezey was a member of the Wright County Medical Society, the Minnesota State and American Medical Associations. He served at one time as coroner of Wright County and as Buffalo health officer. He was president of the city's first automobile club in 1921, and devoted much time to civic and lodge activities. He was a Mason and Knight Templar and a member of the Christian Church.

He is survived by his wife, the former Antonie S. Sommermeyer, whom he married in 1910, one son, Benjamin F. Swezey, Jr., and two grandsons.



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Woman's Auxiliary

STATE PRESIDENT REVIEWS YEAR

Mrs. Harold F. Wahlquist

(The following summary of Woman's Auxiliary activities during 1948-49 was prepared by Mrs. Wahlquist for presentation at the National Convention in Atlantic City, June 6-10.)

Minnesota is proud to be one among forty-eight component auxiliaries forming the Woman's Auxiliary to the American Medical Association. The members of the Woman's Auxiliary to the Minnesota State Medical Association extend greetings to Mrs. Luther H. Kice, our national president, the members of the National Board, and members of the Auxiliary everywhere. We congratulate all for a most effective and energetic year.

Minnesota has just completed its twenty-seventh annual meeting. The past year has been a challenge to us, and we have worked untiringly to meet it.

We are gratified in having 539 new Auxiliary members, a total membership of 2,048 in twenty-nine counties. Three new counties have been organized. We have members-at-large in the three remaning unorganized groups. Organization has been effected through nine regional advisors and members of the Organization Committee. At least six counties are credited with 100 per cent membership.

This past year all of our activities, classified as they may have been, related directly or indirectly to public relations. We wanted people in our communities to know their interests were our interests.

Last September to attain Auxiliary unity and complete comprehension of our undertaking, we set up with the assistance of the Minnesota State Medical Association the first Minnesota Public Relations Workshop Conference in conjunction with our fall Board session. It consisted of a panel discussion on "Mediums for Furthering the Community Health Program"; round table discussions for county presidents, treasurers, and program chairmen; talks by authoritative speakers on timely topics such as public relations and legislation. One hundred members attended this Workshop Conference. We appreciated keenly the visit of Mrs. Kice at this time.

Concurrently, area Health Days became a reality. Minnesota has had nine Health Days since their inception a little over a year ago. They have been co-sponsored by the State Auxiliary, the State Medical Association and the State Department of Health. Through them we have attempted to inform the public about health problems by presenting panel discussions, speakers who spoke with authenticity, exhibits by voluntary health organizations, health movies. Direct results of these Health Days are already evident: they are the formation of County Health Councils, the employment of county health nurses, the active participation of laity in Food Handlers Schools, the enactment of necessary health legislation. The intangible results will never be revealed completely. They are apparent in the increased community appreciation of the contribution to public health of the private practitioner. Said one county Auxiliary president. "Health Day was considered an outstanding day in this community because people felt that the medical people were working with them." In addition to Health Days many cities and towns have had guest days or reciprocity meetings to which representatives of all community organizations have come as guests of the Auxiliary members. The state president was invited to attend state Auxiliary meetings in Iowa, Michigan, Indiana, and North Dakota to present Health Day plans. An exhibit on Health Days was prepared for the convention; now it will be available to Auxiliaries sponsoring Health Days.

Constantly aware that our most important objective is health education, all Auxiliaries have had intensive educational programs to enable all members to be "better informed." Many packets of material have been distributed to county groups with the co-operation of the State Association. In smaller groups the names of all members were listed on the cover of each piece of literature. The member checked her name when she had read the material and subsequently sent the pamphlet to the next member on the list. In addition, one Auxiliary sponsored a weekly radio program using "live" broadcasts and discs from the American Medical Association.

All voluntary health organizations and the Auxiliary have worked very closely this year. During the Heart Drive, hundreds of plastic hearts were distributed by members. The Woman's Auxiliary conducted its eighteenth year of sponsoring the high school speaking project on tuberculosis, with the donation of two trophies and ten medals as prizes. Through the efforts of Auxiliary members and the Minnesota Public Health Association which conducted the project, an estimated 10,000 high school students prepared talks. Further assistance to tuberculosis work consisted of staffing Christmas Seal booths, stuffing seal envelopes and helping the mobile x-ray unit.

During April more than 12,000 children entered the cancer essay poster contest co-sponsored by the Minnesota Division of the American Cancer Society and the Auxiliary. The Auxiliary contributed toward the prizes. In addition, members made hundreds of cancer dressings every month for distribution by county nurses. Members also attended the annual cancer school at the University of Minnesota.

Varying and original activities have been planned to suit the needs of the Auxiliary and its community. To promote friendship in its group, one Auxiliary encouraged members to write and take part in skits depicting the life of families of physicians. The skits were used for entertainment for the state convention.

(Continued on Page 762)

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STATE PRESIDENT REVIEWS YEAR

(Continued from Page 760)

Philanthropic Funds of Auxiliaries were swelled by rummage sales, white elephant sales, Calico Balls, Easter Monday Benefits. One Auxiliary raised $2,650 at a luncheon and style show. All profits have been used to support essay contests, provide loan funds and scholarships for nurses and medical students, purchase *Hygeias* and assist with clinics.

Many groups had special hospital interests; they assisted with sewing and purchasing of sterilizers and hospital beds. Special planned itineraries by several county Auxiliaries made it possible for nurses who are trained speakers to present nurse recruitment to high school seniors. Two Auxiliaries conducted sales of articles made by patients undergoing rehabilitation. Members instructed Red Cross classes, volunteered for duty at Blood Donor Centers. One Auxiliary set up a program to assist in an educational program for patients requiring long-term hospitalization.

Medical and surgical relief and *Hygeia* are uninterrupted projects in Minnesota. Every Auxiliary realizes the value of the promotion of *Hygeia.* They promote it by selling subscriptions, supplying subscriptions to schools and libraries, and giving it as gifts. Mower County placed third in Group I in the National contest. Medical and surgical relief drives have continued, with new outlets being made available through missionaries and Indian Reservations.

Cook County Graduate School of Medicine
ANNOUNCES CONTINUOUS COURSES
SURGERY—Intensive course in Surgical Technique, two weeks, starting July 25, August 22, September 26.
Surgical Technique, Surgical Anatomy and Clinical Surgery, four weeks, starting July 11, August 8, September 12.
Surgical Anatomy and Clinical Surgery, two weeks, starting July 25, August 22, September 26.
Surgery of Colon and Rectum, one week, starting September 12, October 10.
Esophageal Surgery, one week, starting October 10.
Thoracic Surgery, one week, starting October 3.
Breast and Thyroid Surgery, one week, starting October 10.
Fractures and Traumatic Surgery, two weeks, starting October 3.
GYNECOLOGY—Intensive course, two weeks, starting September 26, October 24.
Vaginal Approach to Pelvic Surgery, one week, starting September 19, November 7.
OBSTETRICS—Intensive course, two weeks, starting September 12, November 7.
MEDICINE—Intensive general course, two weeks, starting October 3.
Gastroenterology, two weeks, starting October 24.
Gastroscopy, two weeks, starting July 18, September 26.
Electrocardiography and Heart Disease, two weeks, starting July 18.
Electrocardiography and Heart Disease, four weeks, starting September 7.
PEDIATRICS—Personal course in Cerebral Palsy, two weeks, starting August 1.
DERMATOLOGY—Formal course, two weeks, starting October 24.
Informal clinical course every two weeks.
UROLOGY—Intensive course, two weeks, starting September 26.
Ten-day practical course in Cystoscopy every two weeks.
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Pending national health legislation has given Minnesota members much concern. They have worked diligently this year learning about voluntary and compulsory plans and what the effects of the latter will be on our democratic form of government. At the recent convention, members took 3,000 pieces of literature to distribute in their communities, passed a resolution against compulsory health legislation, acted to have each member contact twenty people, asking them to write their legislators, and to have each county president contact all heads of organizations in her county, asking them to study and support our stand on compulsory health insurance where possible.

On the state level several means have been used to co-ordinate our efforts. Besides the Workshop Conference, our State Association underwrote a quarterly *Newsletter* and allotted the Auxiliary two pages in Minnesota Medicine every month for Auxiliary news and informative material. In addition, all state officers and chairmen were supplied with *Handbooks* and notebooks which contain material relating to their special department. Many subscribed to the *Bulletin.*

Finally, it would be remiss not to mention the important role many Auxiliary members played in our state as leaders in health projects and co-ordinators of efforts of lay leaders. They have served on state, county and local health committees, prepared talks and acted as judges in essay contests. Thus the entire national program has been covered by one county group or another.

Minnesota members were delighted to elect to honorary membership Mrs. S. S. Hesselgrave, a former national secretary, state president, parliamentarian and advisor.

Members in Minnesota grieve the loss of Mrs. James Blake, Sr., former county state and national president, advisor and guide; and Mrs. Archibald MacLaren, the founder of our State Auxiliary. To emphasize our appreciation of Dr. William O'Brien, a long-time advisor to the State Auxiliary, each county is contributing to a memorial which will be placed in his honor in the Dr. O'Brien Memorial Seminar Room in the Mayo Memorial Building at the University of Minnesota.

Any increased activity in Minnesota this year has been made possible through national leadership and the loyal and wholehearted co-operation of our awakened Auxiliary members. Throughout the year we have tried to work as one, guided constantly by our own State Medical Association. For our incoming president, Mrs. H. E. Bakkila, and her Board our earnest wish is a most commendable year. To all I extend sincere appreciation. To this national meeting we wish to bring the assurance that Minnesota is working!

Of the deaths from respiratory tuberculosis in 1947, 32.1 per cent occurred outside of institutions, and 67.9 per cent occurred in institutions. Of the total respiratory tuberculosis deaths, 25.8 per cent occurred in general hospitals, 30.9 per cent in tuberculosis hospitals and sanatoria, and 9.0 per cent in mental hospitals. Sara A. Lewis (biostatistician) *Public Health Reports,* April 1, 1949.

Communication

The Minneapolis Star
Minneapolis, Minnesota
Editor:

The news item on the front page of the *Star* under date of May 25, 1949, reporting the illness of the late Lord Leverhulme, contained some statements which are in error. The reporter stated that "The train conductor wired ahead for a physician to meet the train at Glenwood, Minn. After a cursory examination of the viscount in the patient's compartment, the Glenwood physician advised the family to continue to Minneapolis. . . . The physicians (in Minneapolis) said the viscount's temperature and blood pressure were subnormal and that he had lost a 'considerable quantity of blood.'"

The facts are these: The Soo Line agent at Glenwood, Minnesota, states that he has no record of having received a request for a physician from the train conductor, nor was any actually received. Furthermore, the physicians in Glenwood all deny having seen the viscount. Though without evidence, we understand that the viscount was not seen en route by any physician in Minnesota but by one in another state.

This correction is being requested because of the criticism which is being rained upon all medical facilities at Glenwood by individuals throughout the state, the inference being that someone was negligent in not advising prophylactic measures, that the reported recommendation that "the family continue to Minneapolis" was ill-advised. Although the prognosis in a bleeding peptic ulcer in a man of sixty-one is admittedly poor, we would have been aware of the need for supportive measures to correct the existing shock, from which he probably succumbed, before it became irreversible.

We join the world in regretting the outcome but feel that we should not bear unjust criticism for failure to render proper service. We are asking you to publish this correction.

Very truly yours,

Wayne C. Rydburg, M.D.
Acting Chief of Staff
Glenwood Community Hospital

Editor's Note: The above letter is a copy of one sent to the *Minneapolis Star Journal* and is self-explanatory.

Carefully documented studies on the use of streptomycin in clinical tuberculosis have established the fact that this new anti-bacterial agent exerts a beneficial therapeutic effect on several forms of tuberculosis. At its best, however, it is only an auxiliary part of the general treatment in most forms of the disease, and is partially dependent, for its full effect, upon other more common therapeutic measures, such as bed rest, pneumothorax, and chest surgery. (Recommendations of the Subcommittee on Streptomycin of the Expert Committee on Tuberculosis of the World Health Organization, January, 1949.)

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Of General Interest

Dr. S. N. Swisher, who has been a resident at Ancker Hospital, Saint Paul, for the past year, began a year of research in hematology in the Department of Internal Medicine at the University of Rochester Medical School, Rochester, New York, July 1, 1949.

* * *

Dr. Howard L. Horns, for the past year University representative on the medical service of Ancker Hospital, Saint Paul, and director of the Radio Isotope Unit of the Veterans Hospital, Minneapolis, assumed his duties as assistant dean of the University of Minnesota Medical School, July 1, 1949. He took the position left vacant by Dr. Weaver who became dean of the Medical School at Vancouver, British Columbia.

* * *

Veterans Administration pamphlet No. 10-29, entitled "Rehabilitation of the Chronic Neurologic Patient" and written by Dr. A. B. Baker, professor of neurology, and Dr. Joe R. Brown, clinical associate professor of psychiatry and neurology, at the University of Minnesota Medical School, has just been published. The booklet details the program which has been carried out during the past few years at the Veterans Hospital in Minneapolis. The authors report the success which has attended the rehabilitation methods used under their supervision.

* * *

Dr. F. M. McCarten of Stillwater attended the AMA meeting at Atlantic City. Accompanied by his family, the doctor visited New York and other points of interest along the Atlantic seaboard before returning home June 22.

* * *

In Mountain Lake, Dr. Willis M. Franz recently became associated in practice with Dr. H. R. Basinger and Dr. E. S. Shutz in the Basinger Clinic. A graduate of the University of Minnesota Medical School in 1946, Dr. Franz served his internship at Miller Hospital, Saint Paul. Before moving to Mountain Lake, Dr. Franz was on active duty with the army for two years, stationed at the West Point Military Academy.

* * *

One of the speakers at a three-day continuation course in cancer at the University of Minnesota, June 2 through 4, was Dr. David P. Anderson of Austin. A staff member of the Austin Clinic, Dr. Anderson discussed the role of the general practitioner in cancer detection.

* * *

Dr. Roy E. Eldred, formerly of Crosby-Ironton, recently became associated in practice with Dr. K. P. Malvey in Bottineau, North Dakota.

* * *

A case of ocular Boeck's sarcoid was described in a pathological report by Dr. William V. Knoll, pathologist at St. Mary's Hospital, Duluth, at the annual meeting of the American Ophthalmological Society in Hot Springs, Virginia, June 2 through 4.

Mrs. Mary Dyer Anderson, the mother of Dr. Edward Dyer Anderson, Minneapolis, died on June 3 at the age of ninety.

* * *

Dr. Raymond J. Stein has begun construction of a one-story clinic building in Pierz. The building, of modern design, will contain thirteen rooms, including a waiting room, x-ray laboratory, examining rooms and a dental office. Completion is expected early in September.

* * *

Dr. Joseph A. Schaefer, a former resident of Shakopee, was recently appointed head of the department of pediatrics at the Doctors Clinic, Portland, Oregon, and the Permanente Hospital, Vancouver, Washington. A graduate of the University of Minnesota Medical School, Dr. Schaefer has studied pediatrics at the Children's Hospital, Buffalo, N. Y., and the Children's Hospital, Akron, Ohio.

* * *

On May 22, Dr. Wilford F. Widen, Minneapolis, spoke at the dedication of a new library building on the Bethel College and Seminary campus in Saint Paul. On June 8, Dr. Widen was a speaker at the Minnetonka Baptist Church at Tonka Bay.

* * *

After practicing in Little Falls since January, Dr. Scott J. Mighell announced late in May that he would join the staff of the Veterans Hospital in Fargo on June 1 and that on September 1 he would move to the Veterans Hospital in Des Moines, Iowa, to continue his graduate studies in surgery.

* * *

Among the speakers at a summer clinic in Brainerd on June 10 was Dr. H. Herman Young of the division of orthopedic surgery at the Mayo Clinic, Rochester.

* * *

A physician and a dentist, each with fifty years of practice behind him, were honored at a dinner given by Willmar residents on May 25. The men honored were Dr. Edward H. Frost, who has practiced medicine in Willmar for fifty years, and Dr. C. E. Gerretson, who has completed fifty years of dental practice in the city. More than 200 persons attended the commemorative dinner and took part in the program which followed. Each of the honorary guests was presented with a fifty-dollar bill "to get whatever they wish in the form of a remembrance." Tribute was paid to Dr. Frost in a short talk by Dr. R. J. Hodapp, who represented the Willmar physicians.

* * *

Included in the physicians attending a three-day continuation course in medicine at the University of Minnesota, May 12 through 14, were Dr. A. Harold Mork, Anoka; Dr. H. Bradley Troost, Mankato; Dr. Ralph E. Wenzel, Blue Earth, and Dr. Donald S. Branham, Dr. Catherine Burns and Dr. J. Paul Person, all of Albert Lea.



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Dr. John F. Briggs, Saint Paul, was recently named a delegate-at-large to the American Heart Association assembly at Atlantic City.

* * *

At the sixtieth anniversary celebration and reunion dinner of the St. Luke's Hospital School of Nursing in Duluth on May 26, Dr. S. E. Urberg, St. Luke's chief of staff, presented a tribute to graduates who served in World War II.

* * *

It was announced on May 24 that Dr. Theodore P. Mollers had purchased the Soudan Hospital from his former partners, Dr. E. N. Peterson and Dr. W. S. Neff, Virginia physicians. A graduate of the University of Minnesota Medical School, Dr. Mollers opened a practice in Mountain Iron in 1939 and later moved to Soudan.

* * *

Speaking at a meeting of the Rochester Rotary Club on May 26, Dr. Frank H. Krusen of the Mayo Clinic said, "In my opinion, socialization of medicine would be the first irrevocable step away from that freedom which we Americans hold so dearly and toward a welfare state in which, instead of the government being the servant of the people, the people become the pawns of the state."

* * *

Dr. Richard P. Griffin and Dr. Silas W. Giere, both of Benson, were among the more than ninety physicians who attended a three-day continuation course in surgery at the University of Minnesota, May 9 through 11.

Dr. and Mrs. Douglas R. Kusske, who were married on April 22 in Minneapolis, returned to their home in St. Louis Park (Minneapolis suburb) early in May, following a wedding trip to Chicago and Colorado Springs. Dr. Kusske is studying ophthalmology and otolaryngology at the Minneapolis Veterans Hospital.

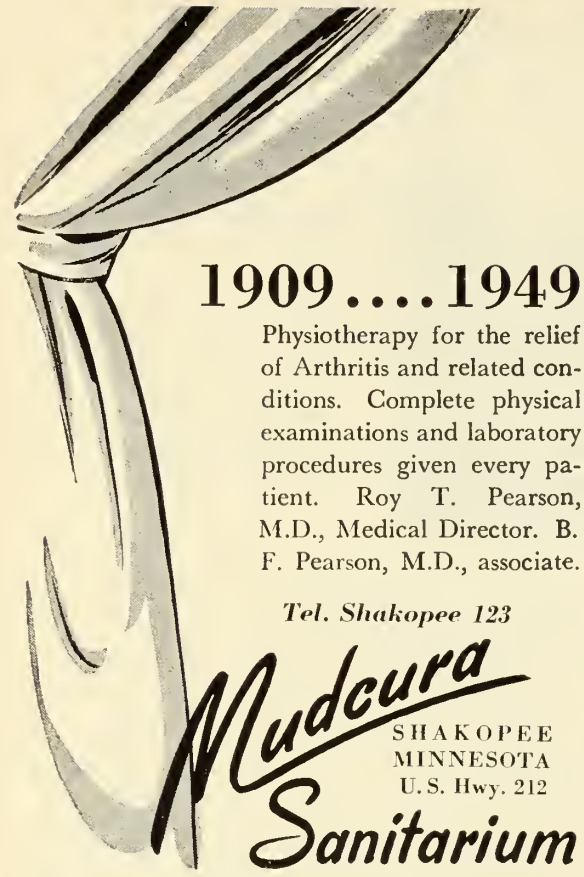
* * *

At a May meeting of the Southern Farm Bureaus in Faribault, Dr. Charles M. Robilliard presented a talk on "The Blood Bank," describing the advantages of having all types of whole blood immediately available and discussing the useful derivatives made from unused whole blood.

* * *

Five of the papers presented at the annual meeting of the American Academy of Neurology at French Lick Springs, Indiana, June 1 through 3, were by Minnesota physicians.

Dr. A. B. Baker, director of the University of Minnesota's neurology division and president of the academy, and Dr. Sidney Shapiro, a member of his staff, reported on the use of dihydro-beta-erythroidine in the treatment of Parkinson's disease. Dr. Joe R. Brown, assistant professor of neurology at the University and director of neurology at Minneapolis Veterans Hospital, and Dr. A. J. Leemhuis, University and VA staff member, gave the results of the first rehabilitation program for persons suffering from diseases of advanced age. Dr. Brown also presented papers on bulbar poliomyelitis and on cerebellar symptomatology. Dr. Ralph



Rossen, superintendent of the state hospital at Hastings, and Dr. Axel Olsen reported on neuropsychiatric and laboratory observations in a series of 147 head injury cases.

* * *

Dr. S. A. Slater, superintendent of Southwestern Minnesota Sanatorium, attended a reunion of his medical class at the University of Virginia, in Richmond, Va., during the first week of June.

* * *

A $500 scholarship to be awarded annually to a Concordia College senior who plans to become a physician has been set up by Dr. B. T. Bottolfson, Moorhead physician now practicing in Fargo, North Dakota. Dr. Bottolfson, a graduate of the University of Minnesota, began practicing in Moorhead shortly after World War I. During 1937 he lived in India, studying nose and throat diseases. Upon his return to Moorhead, he gave up general practice but soon returned from retirement to begin practicing in Fargo.

* * *

One of the speakers before the Minnesota Dietetic Association, meeting in affiliation with the Upper Midwest Hospital Conference in Minneapolis on May 26 and 27, was Dr. Russell M. Wilder, Sr., Rochester, who spoke on "The Nutritional Status of the People of Newfoundland."

Among the physicians who attended a three-day continuation course in cancer at the University of Minnesota, June 2 through 4, was Dr. David M. Potek, International Falls.

* * *

The 1949 Southern Minnesota Medical Association award for outstanding work in the clinical fields of medicine and surgery at the University of Minnesota Medical School went to John K. Meinert, a senior from Winona. Dr. Harold S. Diehl, dean of medical sciences, made the presentation.

* * *

Dr. Arthur H. Wells, Duluth, was elected president of the Minnesota Society of Clinical Pathologists at its meeting in Saint Paul on May 11. The session was held in conjunction with a testimonial dinner for Dr. E. T. Bell, who recently retired as head of the pathology department of the University of Minnesota Medical School.

* * *

Little Falls acquired a new physician in early May when Dr. Robert A. Stoy became associated in practice with Dr. R. V. Fait and Dr. D. L. Johnson. Dr. Stoy is a graduate of Loyola University. Prior to moving to Little Falls he was located at LaFayette, Indiana.

* * *

Construction work on a new clinic building in Baudette began on May 9. When completed, the building will house the offices of Dr. A. A. Brink, Dr. Leonard Prochaska and Dr. A. G. Janecky. Dr. Janecky is moving from Warroad to Baudette. The new clinic will contain eighteen rooms, including examining rooms, reception room, x-ray room, laboratory, and a room for minor operations.

* * *

Dr. Edgar V. Allen, Rochester, was elected vice president of the American Heart Association at the organization's twenty-fifth annual membership meeting in Atlantic City early in June.

* * *

The Hennepin County Medical Society has conducted a survey of its members, by secret ballot, to determine the attitude of society members on several controversial issues, among them compulsory federal health insurance.

In May, 829 ballots containing six important questions were sent to society members. The 608 replies that were received were counted by an impartial board of judges.

A total of twenty-nine members voted in favor of governmental compulsory sickness insurance supported by compulsory payroll deductions or income taxes. A total of 565 voted against it, and fourteen checked neither answer.

Results for the five other questions were as follows:

Medical co-operatives (by lay groups, consumer co-operatives).—79 favor, 494 oppose, 35 no opinion.

Blue Cross and Blue Shield plans.—572 favor, 18 oppose, 18 no opinion.

Federal grants-in-aid to states for increasing educational facilities to produce more doctors, nurses and technicians (under state control).—296 favor, 287 oppose, 25 no opinion.

Federal grants-in-aid to states to help share cost of health care for the indigent, medically indigent, mentally deficient, tuberculous, the halt, lame and blind (under state control).—436 favor, 157 oppose, 15 no opinion.

Federal grants-in-aid to states to share cost of hospital care for those unable to assume any or all of this cost (under state control).—408 favor, 183 oppose, 17 no opinion.

A number of physicians added individual comments to their ballots, some saying that Blue Cross and Blue Shield benefits are too limited, others favoring only the Blue Cross plan. Three physicians were in favor of governmental compulsory insurance for low income groups only.

* * *

At a meeting of the Minnesota Academy of Ophthalmology and Otolaryngology in Saint Paul on May 11, Dr. O. E. Hallberg, Rochester, presented a paper written in collaboration with Dr. J. W. Begley, also of Rochester, entitled "Osteoma of the Paranasal Sinuses and Its Treatment."

* * *

Three International Falls physicians were appointed to the Koochiching County Welfare Medical Board on May 10. They are Dr. F. H. Walter, Dr. R. D. Hanover and Dr. F. G. Chermak, and their appointments are for one year.

Members of the Lake City League of Women Voters and the Lake City Chamber of Commerce, at a meeting on May 17, heard three British physicians describe what has happened in Great Britain under socialized medicine.

The speakers were Dr. Harold Rodgers, professor at Queen's College in Belfast, Ireland; Dr. Arnold Aldis of Cardiff, Wales, and Dr. William Capper of Bristol, England. The three physicians described the unhappy lot of the general practitioners, the increase in complaints of nonexistant or slight ailments, the oppressive taxation, and the steadily mounting cost of the plan.

* * *

Dr. Howard K. Gray, head of a section in surgery at the Mayo Clinic, received a doctor of science degree at the Lafayette College commencement exercises on June 10.

* * *

It was announced on June 3 that Dr. B. O. Mork, Jr., planned to leave the Worthington Clinic, after seventeen years as a staff member, to enter public health service. Dr. Mork said that he would remain as medical director of Minnesota Public Health District 5 while completing studies to qualify for the public health service.

On May 17, Dr. Mork was guest speaker at the organizational meeting of the Wilkin County Health Council in Breckenridge. To a group of fifty representatives of township and villages Dr. Mork explained



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the purposes and organization of county-wide health councils. He also led a panel discussion on public and community health topics.

* * *

During the middle of May, Dr. Frank D. Gray of Marshall attended a reunion of his medical class (1899) at Northwestern University, where he received a diploma of merit commemorating his fifty years of medical practice.

Following graduation, Dr. Gray spent several years in practice at Vesta, then moved to Marshall to help found a hospital there. He has conducted his practice in Marshall for the last thirty-eight years. He has two sons, both physicians: Dr. Robert Gray, now doing postgraduate work at the University of Chicago, and Dr. Frank Gray, Jr., an instructor at the Yale University Medical School.

* * *

Two Rochester physicians presented papers at a meeting of the North Dakota State Medical Association in Minot on May 16. Dr. J. R. McDonald spoke on "Cytologic Diagnosis of Cancer with Reference to Various Smears and Stains." Dr. C. S. MacCarty discussed "Surgery of the Sympathetic Nervous System."

* * *

Pointing out that the principal advocates of socialized medicine are playing politics with the issue, Dr. J. Arnold Malmstrom, at a meeting of the Virginia Kiwanis Club on May 24, painted a dark picture of what would happen in the United States under a system of progressive socialism. Following his talk, Dr. Malmstrom conducted a question and answer session on the same subject.

* * *

Every Wednesday night, two dozen members of the "Lost Cord Club" meet in the University of Minnesota Hospitals to learn to talk by esophageal speech. Each club member is a person who has had his larynx removed because of cancer.

Under the direction of Dr. Sherman O. Strand, each of the members learns how to swallow air and then release it slowly from his esophagus, controlling it with his throat muscles to produce sound. Only two persons have dropped out of the class so far, and most are determined to learn to speak again. A few members, star pupils who have overcome their own handicap, return to the class to help others learn the trick of "burping" out words. Some persons learn to speak fairly well within a few weeks; with others several months may be necessary.

New members can be admitted to the club if they are referred by their own physicians.

* * *

Dr. John Hall O'Leary, a resident physician at Ancker Hospital, Saint Paul, was married in Saint Paul on June 11 to Miss Enid Lois Keene, an occupational therapist at Minneapolis Veterans Hospital. Attendants of the couple at the ceremony were Dr. O'Leary's brother-in-law and sister, Dr. and Mrs. Milton B. Sorem of Saint Paul.

* * *

At a joint meeting of the Range and St. Louis County Medical Societies in Ely on June 28, the principal speaker was Dr. J. Dewey Bisgard, professor of surgery at the University of Nebraska, who spoke on "Cancer—Ulcer Problem of the Stomach."

While visiting at the University of Minnesota Hospitals early in June, Dr. L. J. Witts, professor of clinical medicine at Oxford University, told staff physicians that Britain's nationalized health service has had a beneficial effect on medical schools.

"Instead of discouraging students from entering the medical profession, the health service demand for more doctors has built up a heavy competition for entrance to British medical schools," Dr. Witts said. "There are ten, twenty or thirty applicants for every opening."

* * *

Four members of the University of Minnesota Medical School staff described the University's Cancer Detection Center on June 10 at the annual meeting of the American Medical Association in Atlantic City. The report on the center was presented by Dr. David State, Dr. David Gaviser, Dr. Thomas B. Hubbard, Jr., and Dr. Owen Wangensteen.

HOSPITAL NEWS

In the election of officers of the medical staff at the St. Lucas Deaconess Hospital, Faribault, during the middle of May, Dr. D. W. Francis of Morristown was elected president. Among the other officers named were Dr. R. R. Moses, Kenyon, vice president; Dr. C. W. Rumpf, Faribault, secretary, and Dr. C. M. Robilliard, Faribault, member-at-large on the executive commit-

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tee. Retiring officers included Dr. C. A. Traeger, president; Dr. Paul H. Weaver, secretary, and Dr. F. W. Stevenson, member-at-large on the executive committee, all of Faribault.

* * *

After two weeks of progress, a hospital fund-raising campaign in Parkers Prairie had collected one-fourth of its $25,000 goal on May 29. The campaign was seeking funds to purchase a fourteen-bed hospital that has been closed since last December. The fund raisers plan to turn the hospital over without charge to whatever church organization offers the most advantageous terms.

* * *

Combination resuscitator-inhalator and aspirator machines were presented to Loretto and Union Hospitals in New Ulm on May 13 by the New Ulm Lions Club.

* * *

Launching of a drive for $250,000 to remodel the old Riverview Hospital in Saint Paul and construct an addition took place at a dinner in the Riverview Commercial Club on May 23. The hospital, which is the only one on the west side of the Mississippi River in Saint Paul, is the former West Side General Hospital.

At the dinner meeting, Dr. George Earl, past president of the Minnesota State Medical Association, and James Hamilton, professor of hospital administration at the University of Minnesota, stressed the need for a hospital in the area. Dr. E. K. Endress, chief of staff of the hospital, announced that the hospital staff had pledged 20 per cent of the $250,000 and that $37,000 of that pledge had already been collected. It was expected that the entire $250,000 would be raised by July 2.

Of the total, $150,000 will be allotted to the new wing, which will include major operating rooms, urological room, laboratory, x-ray room and twelve beds; $70,000 will be used to purchase the old hospital, and $30,000 will cover remodeling and fire-proofing the old section. When completed, the structure will be an eighty-four-bed hospital.

* * *

Construction work on a hospital at Carlton resumed in May after being virtually at a standstill during the winter. In spite of the slow progress and rumors about the noncompletion of the hospital, the Carlton Chamber of Commerce voted on May 18 to support the hospital committee in its plan to proceed with construction. The committee reported that much material, already paid for, was on hand and that there was still a cash balance of $4,500 in the hospital fund. It was expected that considerable progress would be made during the summer.

* * *

Hospital administration personnel from five states and Canada met in Minneapolis May 26 through 28 for the annual Upper Midwest Hospital Conference. Speakers at the meeting covered such subjects as trends in hospital administration, recruitment and education of nurses, medical staff problems, food cost control, hospital liabilities and responsibilities, hospital public relations and public health.

Among the speakers at the meeting were Dr. G. Albin Matson, director of the Minneapolis War Memorial Blood Bank; Dr. Cyrus Barnum, Dr. Gaylord Anderson and Dr. George Moore, of the University of Minnesota.

* * *

A fund drive for $450,000 to complete the expansion program of St. Luke's Hospital, Duluth, and to add a 150-bed annex to the hospital began at a dinner meeting in Duluth on June 1. The new annex will be constructed across the street from the main hospital and will be connected by underground and overhead passages. The annex will serve as an infirmary for patients with chronic diseases.

On the night before the drive began, Duluth physicians, meeting at the hospital, pledged themselves to a $50,000 goal in the campaign.

BLUE SHIELD NEWS

To date this year (May 31, 1949) Blue Shield has made payment on 9,101 cases in the total amount of $354,948.42. Payment was made for 2,367 cases during May amounting to $90,627.00.

At the annual meeting of the Minnesota State Medical Association which was held in Saint Paul this year, Blue Shield was discussed at some length both with the Medical Councillors and with the House of Delegates. The annual report of Minnesota Medical Service Inc. was presented by Dr. O. I. Sohlberg, president, at the Sunday evening meeting of the House of Delegates. At this meeting Dr. Elias, chairman of the Council, distributed typewritten copies relative to recommendations by the Board of Directors of Minnesota Medical Service Inc. to the Council at a meeting held on January 16, 1949. Due to the lateness of the hour discussion on the recommendations was postponed until Monday, May 9, at 1:30 p.m.

At the Monday afternoon session of the House of Delegates on May 9, 1949, Dr. Frank J. Elias, chairman of the Council, presented a brief report of the Minnesota Medical Service Inc. including the proposals which were submitted by the Board of Directors of Minnesota Medical Service Inc. which were as follows:

The Board of Directors of Minnesota Medical Service Inc. wishes to consider the possibility of increasing the income limits of unlimited subscribers from $1,500 to $2,000 per year for single subscribers, and from $2,500 to $3,000 per year for family subscribers.

The Board of Directors also wishes to consider the possibility of adjusting certain payments to doctors included in the schedule of payments which at the present time may be inequitable, a standing committee of the Board of Directors being available for this purpose.

Dr. Elias stated that a resolution was passed by the Council, approving in principle the proposals presented by Minnesota Medical Service Inc. as outlined above, provided, however, that they be presented to the House of Delegates of the Minnesota State Medical Association.

Dr. O. I. Sohlberg, president of Minnesota Medical Service Inc., was then called upon to give further information necessary. He advised the members of the House of Delegates that if they agree to raise the income limits of the unlimited subscribers it would still have to be referred to the participating doctors of medicine before such could be put into effect. Dr. Sohlberg also mentioned that of the seventy-three Blue Shield Plans in existence today there are only three plans that have as low income limits as we have at present.

After the subject had been considerably discussed action was taken by the House of Delegates regarding the following resolution:

"Expressing our confidence in the Board of Directors of the Minnesota Medical Service Inc., and to promote the social welfare of the people who are within the unlimited income group, the House of Delegates agrees in principle to the increase in limits for unlimited subscribers from $1,500 to $2,000 per year for single subscribers and from $2,500 to $3,000 per year for family subscribers."

The resolution was unanimously approved.

It was understood that before these changes would take place a letter would be submitted to all participating doctors throughout Minnesota for their opinions on this proposed change. These letters went out to all the Blue Shield participating doctors of medicine in the middle of May with the request that if there were any comments or suggestions they be returned to the Blue Shield office not later than the 15th of June, 1949. As of that date very few letters had been received.

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All of the letters received stated that the physician would be very happy to continue as a participating doctor of medicine irrespective of the income status of the Blue Shield subscriber, and some admitted that they had been working on this basis prior to the present time. It was assumed that the physicians that did not respond were in accord with this change and consequently would continue as Blue Shield participating doctors of medicine.

At the time that these changes will go into effect, all of the participating doctors of medicine will be advised and they also will be advised of any contract changes or changes in the Blue Shield schedule of allowances. A committee of the Board of Directors is now studying the present schedule of payments to doctors with the anticipation of correcting any inequitable payments.

It is the intention that by increasing the present income status Blue Shield can more completely demonstrate its benefits insofar as a service contract is concerned. Also it is felt that by being able to offer a service contract to more people it would be a very definite indication as to what a nonprofit medical care plan operated by the medical profession could do and establish, thus proving that nongovernment health insurance is doing the most for the least cost with the support of the American public and the American medical profession.

We are very pleased to notice the change that has transpired the last month as a result of our luncheon meeting with the physicians' office personnel, and it would appear that we have received fewer phone calls regarding various cases. As the office personnel knows the Blue Shield procedure, we find that we do not have to contact the physician's office as frequently as we did before to obtain necessary and additional information for a claim to be processed. We are very satisfied indeed with the results and appreciate the interest the physicians have shown in having their office personnel attend these luncheons. Many of the doctors have contacted us to thank us and comment on what an assistance this has been to their people, and they are also very pleased with the interest we have shown in the physician, in that he doesn't feel that he is out in the cold but that he is a part of his own prepaid medical care plan.

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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

MEDICINE OF THE YEAR. John B. Youmans, M.D. (Editor). Dean, College of Medicine, University of Illinois. 143 pages. Price $5,00, cloth. Philadelphia: J. B. Lippincott Co., 1949.

NEW YORK ACADEMY OF MEDICINE—Its First Hundred Years. Philip Van Ingen. 573 pages. Illus. Price $10,00, cloth. Morningside Heights, New York: Columbia University Press, 1949.

OBESITY. Edward H. Rynearson, M.D., F.A.C.P., and Clifford F. Gastineau, M.D., of the Mayo Foundation of Rochester, Minnesota. 144 pages, 9 figures and 16 tables. Price $3.50. Springfield: Charles C Thomas, 1949.

This excellent monograph takes in the many aspects of obesity, stressing the importance of this condition on the general health of the population, and endeavors to stimulate members of the medical profession to take a more active and aggressive interest in this affliction than they have in the past.

There is a well-written chapter on the physiology of obesity, where the many factors produced by the condition are pointed out, and in which the authors state that the various abnormalities associated with obesity are probably the result of the obesity rather than causative factors.

A large chapter is devoted to the many theories of the etiology of obesity, and each factor is clearly presented and discussed. The research findings and results of many investigators are evaluated in a clear and concise manner. Many of the theories propounded have not been proven, and the author's opinion is that obesity is directly due to an individual's overeating, but they stress that many theories still exist relative to the problem of obesity and its causes.

The chapter devoted to diet and reduction therapy, giving details and reasoning, is very worthwhile. It contains several tables and charts by which one can evaluate reduction, and it gives a clear-cut method of procedure in handling obese individuals.

The final chapter deals with such subjects as psychotherapy, various drugs used in curbing appetites, treatment of obesity, and the mechanical physiotherapy methods employed in some atttempts in reduction.

There is a complete bibliography for ready reference on various aspects of the subject, listing 422 articles.

E. W. MINTY, M.D.

CONGENITAL DISLOCATION OF THE HIP

(Continued from Page 752)

DR. C. N. HENSEL, Saint Paul: I would like to take exception to Dr. Rigler's suggestion that all newborns have a routine x-ray of the hip before leaving the hospital. It seems that there is a growing tendency to want the x-ray department and laboratory to make our diagnosis for us, all of which tends to blunt diagnostic acumen. As I have seen from these pictures tonight, the clinical signs of subluxation are easily recognized and should be sought for, and only when they are found should x-ray be ordered.

DR. RIGLER: I don't think that x-ray examination is a laboratory procedure. It is just a part of the physical examination. It is artificial to try to distinguish between one kind of physical examination and another. You might as well decry the use of the stethoscope because clinicians no longer learn to hear the heart with the ear itself. It is a matter rather of which examination is most easily done and gives you the most information with the least trouble on the part of the patient. I think the important thing is to make a diagnosis.

DR. HART (in closing): The dysplastic hip with displacement usually is not dislocated but is subluxated during early infancy. There is considerable chance for error in the x-ray interpretation. Both the clinical physician and the roentgenologist must be enthusiastic about the subject of hip dysplasia if routine x-ray studies are made at birth and at several periods during the first six months of life. Co-ordinated clinical and x-ray studies are important because at present there are no valuable statistics in this country on this interesting subject.

The meeting was adjourned.

A. E. CARDLE, *Secretary*

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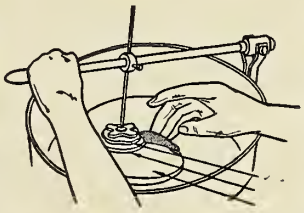
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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 32 **August, 1949** **No. 8**

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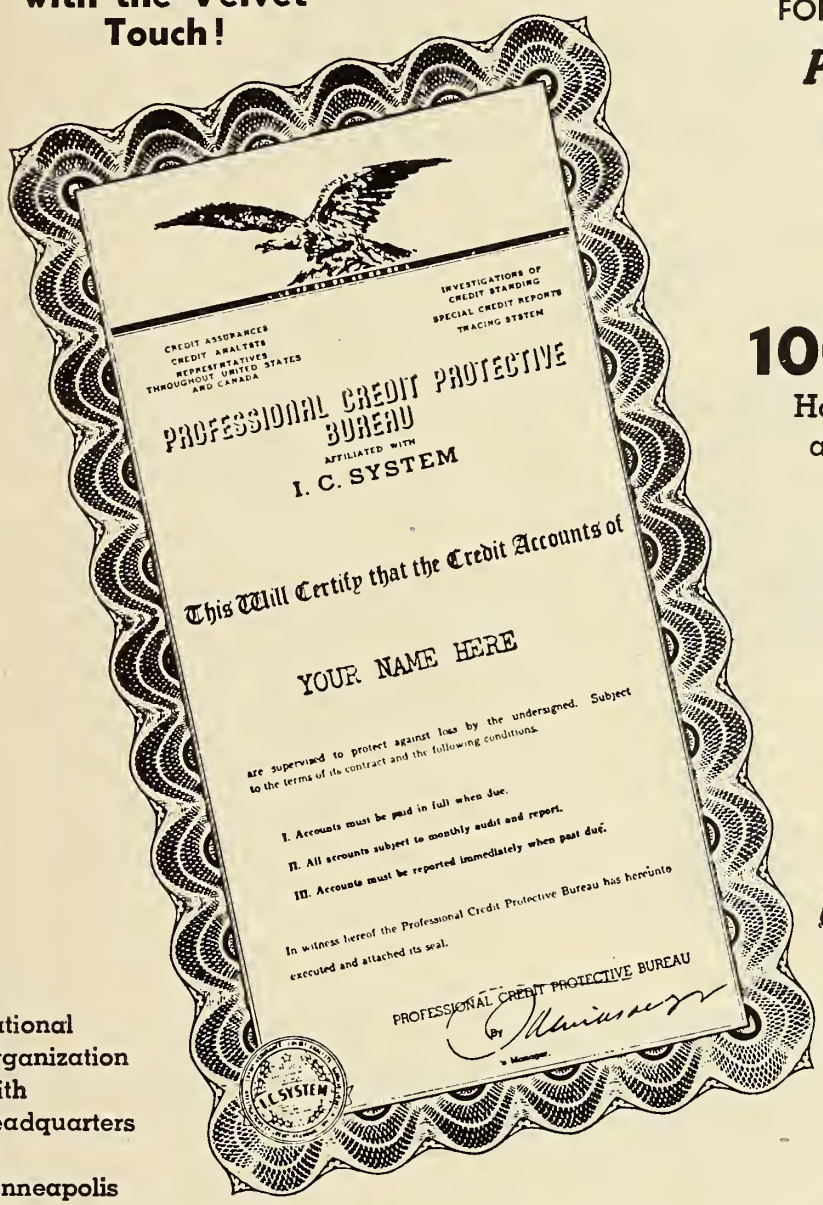
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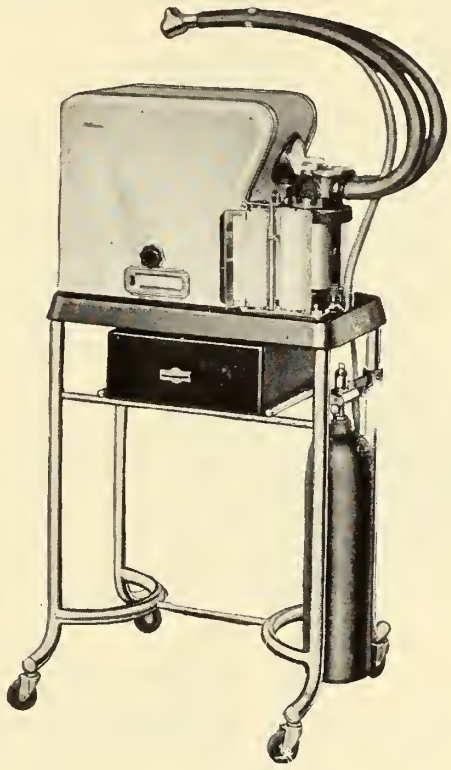
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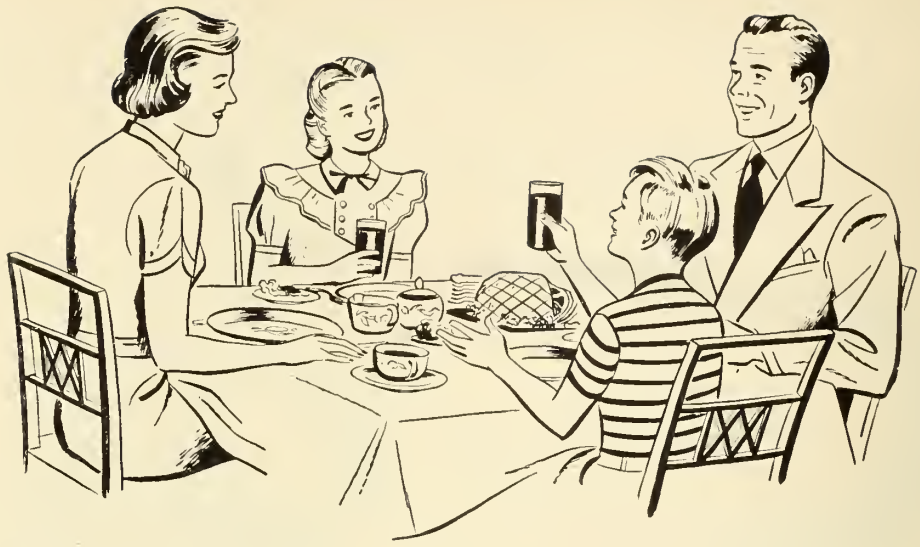
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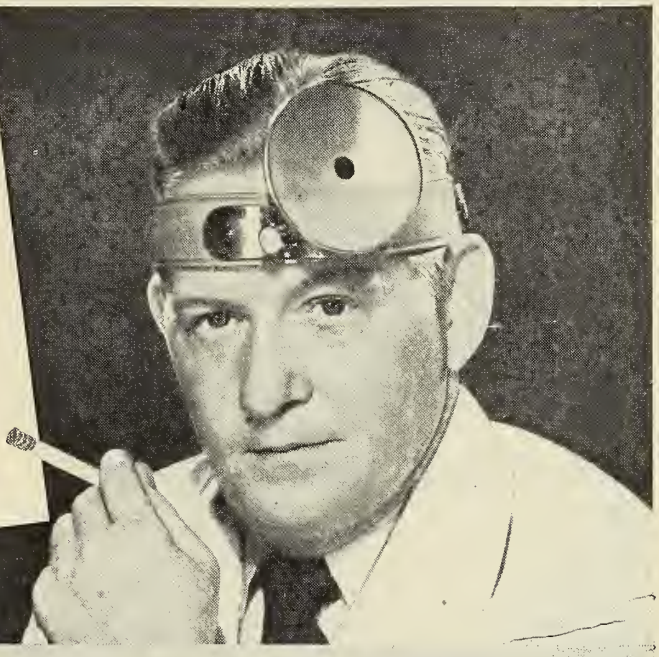


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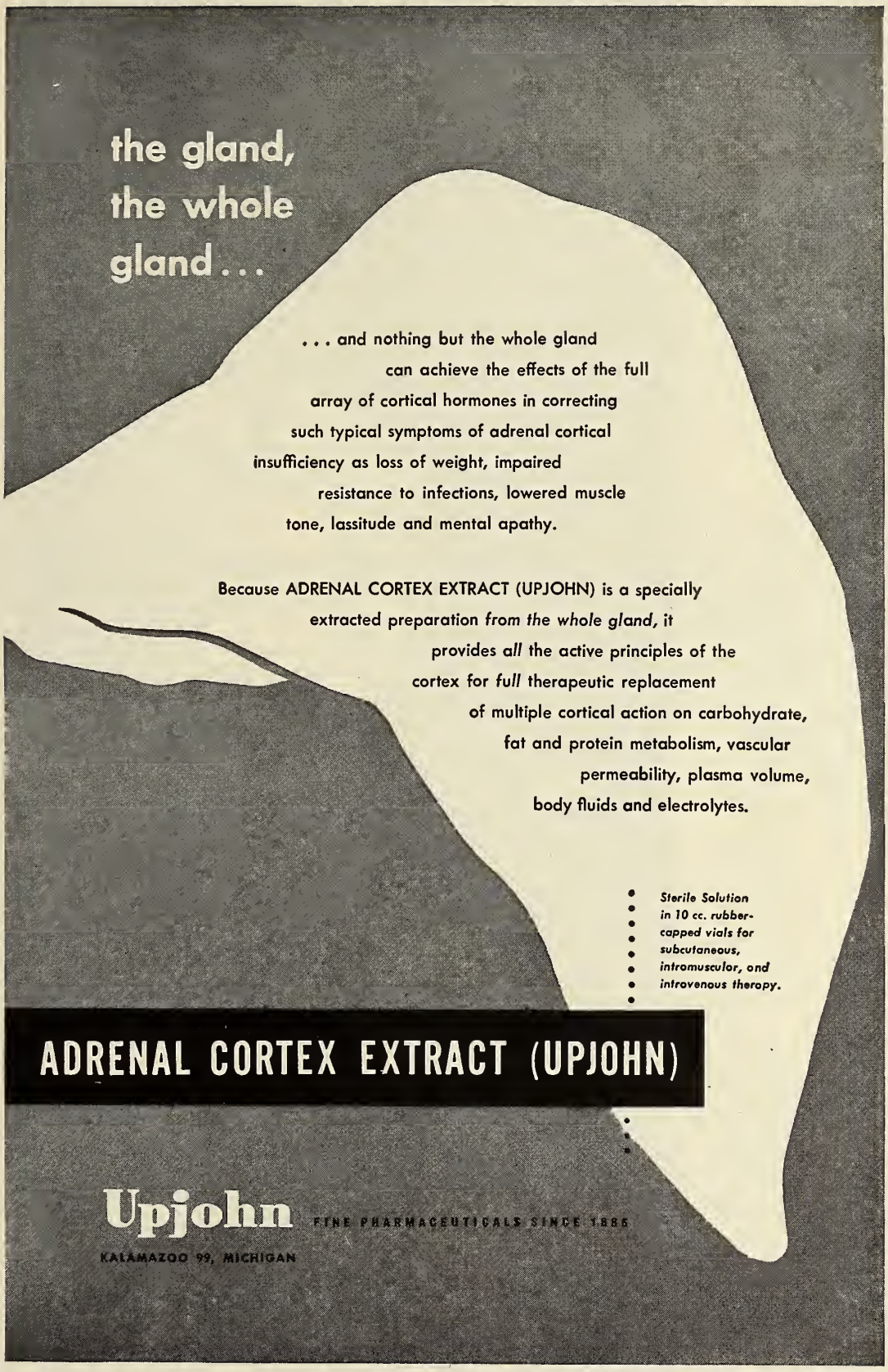
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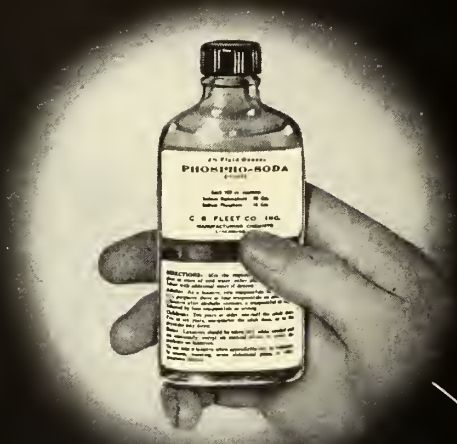
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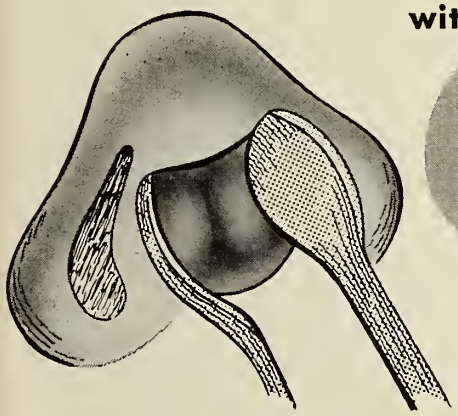
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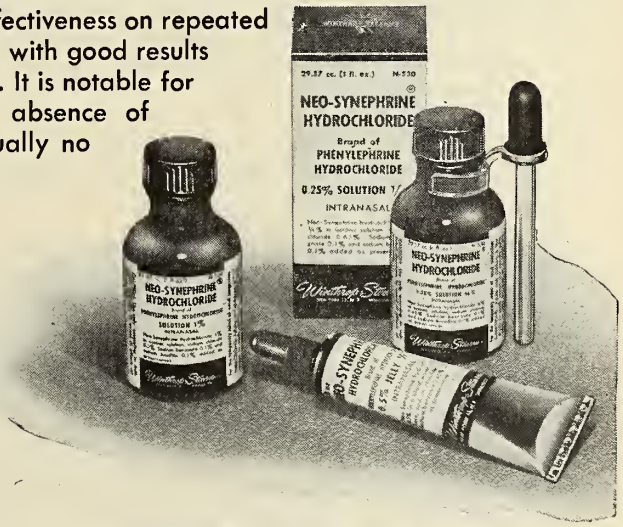
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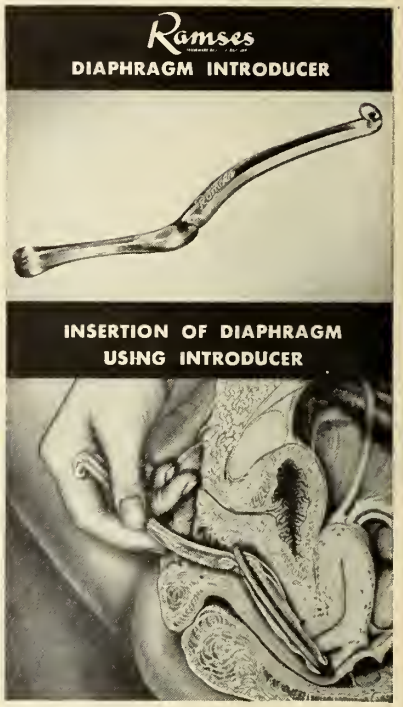
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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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THE MINNESOTA CENTENNIAL—ITS MEDICAL HISTORY

E. M. HAMMES, M.D.
Saint Paul, Minnesota

IN 1928 the Council of the Minnesota State Medical Association appointed an historical committee whose duty it was to collect material pertaining to the history of the Minnesota State Medical Association, its pioneer physicians and other interesting facts.

Under the chairmanships of the late Dr. A. S. Hamilton, the late Dr. John Armstrong and our present chairman, Dr. Monte Piper, extensive research and study were made and, as a result, our Association has on file a large volume of important and interesting history of the Association which is celebrating its ninety-sixth anniversary.

A considerable portion of material has been published at monthly intervals in MINNESOTA MEDICINE, and it is the hope that in the near future this will appear in book form, accessible to every member of our Association for his library.

I want to express the appreciation of our Association to this committee and especially to the chairmen for their untiring efforts during these many years and for the very accurate work they have done. Personally, I want to thank Dr. Monte Piper and his present committee for their permission to utilize freely their available historical material. Without this, this presidential address, "The Minnesota Centennial, its Medical History," could not have been written.

The Organic Act of Minnesota, establishing the Territorial government, was passed by the United States Congress, March 3, 1849. On April 9, 1849, the first steamer from "below" brought to the levee at St. Paul the good news that the Territory of Minnesota had been created.

May I take a few minutes to refresh your memory about some interesting events? In 1836 the Territory of Wisconsin was organized, its boundaries extending from Lake Michigan to the Mississippi River. Ten years later, in 1846, the Territory of Wisconsin became a state, with its western boundary on the St. Croix River.

When Minnesota became a territory, its boundary extended from the Mississippi River west to the Missouri River, excluding the areas between the St. Croix and Mississippi.[1] This area was a sort of no-man's-land without law or government, but was finally included in the Territory of Minnesota. This small area had been acquired as a white settlement from the Sioux Indians by treaties in 1837, but all lands west of the Mississippi still belonged to the Indians. The first seal of the Territory of Minnesota amply expressed the great desire of its citizens to obtain this large area west of the Mississippi, known as the "Suland," and it was finally purchased from the Sioux Indians July 23, 1851.[2] The treaty was signed by thirty-five chiefs and thirteen witnesses and comprised all their lands east of the Red River and down to the Minnesota River, with a small area excluded around Lake Traverse and along the Minnesota River. Thus was opened this large area for settlement and development by white people.

The problem of designing a territorial seal was assigned to Governor Ramsey and Mr. Sibley, the territorial delegate. The seal well expresses

President's Address at the Annual Meeting of the Minnesota State Medical Association, Saint Paul, May 10, 1949.

the sentiment of these settlers, "Westward." Although the draftsmen erred in placing the Indian on the east side of the Mississippi and riding eastward toward the setting sun, the mistake did



Christopher Carli

not dull the keen message of the seal, along with the Latin motto (misspelled) *Quae sursum volo videre*, "I fain would see what lies beyond."

This sentiment was also well expressed in a poem written by the wife of Captain Seth Eastman. The first eight lines are as follows:

"Give way, give way young warrior
Thou and they steed give way.
Rest not, though lingers on the hills
The red sun's parting ray.
The rocky bluff and prairie land
The white man claims them now
The symbols of his course are here
The rifle, ax and plow."

The State Medical Association

In 1841, eight years before the Minnesota Territory was organized, Dr. Christopher Carli paddled up the St. Croix River and opened an office in the Dakotah Territory where Stillwater now stands. He was the first civilian physician in Minnesota. He practiced his profession in this territory till his death in 1887. Dr. Carli was an Italian, had been educated at Heidelberg and practiced for a time at Buffalo, New York, before coming to Stillwater.

The next civilian physician was Dr. John J. Dewey, who came to Ramsey County in 1847. In 1849 Dr. Thomas R. Potts, first president of the Minnesota State Medical society, located in Ramsey county. In the same year Dr. John H. Murphy came to St. Anthony Falls and was the first civilian physician in what is now Minneapolis.

The Minnesotan, a Saint Paul newspaper, July 16, 1853, contained the following note:

"We are requested to state that the medical profession of the Territory will hold a convention at St. Paul the twenty-third instant."

This is the earliest record found and represents the first attempt to hold a medical meeting in the district known as the Minnesota Territory.

On July 23, 1853, the convention of physicians in Minnesota met at the courthouse in St. Paul. Nine men were present, seven of them residing in St. Paul or St. Anthony. Dr. A. W. Daniels of St. Peter and Dr. O. P. Marsh of St. Paul were marked present by request. A constitution and by-laws were adopted, but these evidently were not preserved as they have not been found. Dr. Thomas R. Potts of St. Paul was elected president and the society was called the Minnesota Medical Society. Dr. John H. Murphy was elected delegate to the next meeting of the National Medical Association and journeyed to St. Louis in 1854 as our delegate.

Two subsequent meetings were held in 1856 and 1857. After that period the Society was allowed to languish. Civil war broke out and many medical men entered the military service. No further meeting was held until February 1, 1869—a lapse of twelve years.

This meeting took place at the International Hotel, St. Paul, "to consider the expediency of reviving the old society or of organizing a new one." Minnesota was admitted as a state on May 11, 1858. At the medical meeting of 1869, the society is referred to as the Minnesota *State* Medical Society. The reorganization of the society took place at this convention, and Dr. Samuel Willey of St. Paul was elected president. The annual assessment was to be $2 per member.

The first semi-annual meeting was held in Owatonna in June, 1869. Dr. Kimball's essay, a treatise on the subject of rheumatism, was read in his absence by Dr. W. F. Hutchinson. At this meeting a resolution was adopted which prohibited the admission to membership of anyone who could not produce satisfactory evidence of being a legal practitioner of medicine. A special committee reported that there were 119 regular and

ninety-three irregular practitioners in the state. The evening session was devoted to a discussion of quackery. The program for the next semi-annual meeting was to consist of the origin, nature and treatment of typhoid fever.

Regular annual meetings of the Minnesota State Medical Association have been held since 1869. In 1872 the membership was about 150; today it is 3,248.

All annual meetings until 1876 were held on the first Tuesday in February. The month of February was originally selected because the Legislature would be in session at that time and the medical men could meet the members and make representations to them. Evidently, in those early days, there was no public policy committee that was effective, as the results were not encouraging and the date of the annual meeting in 1876 was changed to June.

At the tenth annual meeting, held at St. Peter in June, 1878, Dr. Adams announced that Dr. J. H. Murphy had been elected as one of the vice presidents of the American Medical Association. Thus our society received some national recognition even in its early youth.

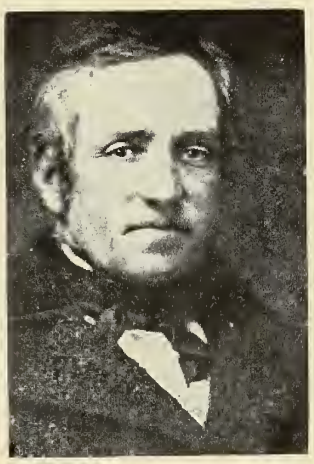
On March 31, 1851, a complete code of laws for the Territory of Minnesota was passed. The same code included a law authorizing the formation and regulation of county medical societies. No provision was made to form a Minnesota Medical Society, although this society was organized July 23, 1853, apparently without any legal standing. Two years later, on June 20, 1855, the Union Medical Society, which was the precursor of the Hennepin County Medical Society, was founded, with Dr. A. E. Ames as president—the first county medical society in this territory.

In 1860 the second county medical society was organized—the St. Paul Academy of Medicine and Surgery, with Dr. Thomas R. Potts as president. The initiation fee was $20. This was reorganized in 1869 and became the Ramsey County Medical Society.

In that same year Dakota, Goodhue and Winona Counties established their local county medical societies. This sudden burst of activity was associated with the reorganization of the Minnesota State Medical Society during this period.

In 1872 Dr. Franklin Staples, in his presidential address at the annual meeting of the Minnesota State Medical Society, stated:

"There are now six county medical societies organized in the state, all of which have become auxiliary to this society by complying with the conditions prescribed by the constitution."



Thomas R. Potts

However, not all of the county societies were willing to affiliate with the state society. Occasionally one was quite hostile, and for a time the Hennepin County Medical Society was scarcely on speaking terms with the state society. Problems and misunderstandings were gradually ironed out, and by 1900 fifteen local and county societies, including Hennepin, were recognized as auxiliary to the state society. Today the Minnesota State Medical Association comprises thirty-two county societies.

Women Physicians

At the semi-annual meeting, in 1870, Dr. A. B. Stuart moved that Miss Harriet E. Preston of Rochester, a graduate of the Women's Medical College of Philadelphia, be invited to participate in the deliberations of the society. Dr. W. W. Mayo endorsed this woman as a fairly competent and qualified practitioner. There was a heated discussion, and the motion to admit Miss Preston was finally tabled, partly because the American Medical Association was not admitting women physicians and partly because their respect for female delicacy would prevent them from discussing a case, about to be presented, of congenital malposition of the bladder in a male patient. This patient proved to be a baby of nine months in its mother's arms. Dr. John H. Murphy recognized the inevitable in his comments,

"This female woman question is looming up and you cannot stop it."

Dr. A. J. Stone, however, felt that "physiological disability is the only true ground upon which women can be rejected from a calling which the good sense of the mass of mankind still teaches them to believe her to be unfitted for."

Opinions change and hearts soften, for on June 17, 1898, the same Dr. Stone seconded the nomination of Dr. Mary Whetstone as vice president of the Minnesota State Medical Society. In 1871, at the San Francisco meeting, the AMA finally adopted a resolution to admit female physicians, properly qualified, as members of the Association.

However, it was not until 1880 that the Minnesota State Medical Society altered its constitution and admitted to membership three women physicians, all members of the Ramsey County Medical Society, namely: Dr. Harriet E. Preston, Dr. Clara E. Atkinson and Dr. Edith M. Gould.

These are a few of the interesting highlights in the development of this great organization, the Minnesota State Medical Association.

Licensing Physicians

When the territorial laws were adopted in 1851, the county societies were empowered to license physicians. The applicant had to be 21 years of age, have a good English education and must have studied three years with some respectable practitioner, and passed the required examination. The duty of examining students was made the responsibility of the censors of each society.

In 1869 the Medical Practice Act in Minnesota was passed. The act was unpopular and was regarded as an arbitrary measure in the interest of old school doctors and was repealed within two years. Evidently the old territorial laws of 1851 continued in effect until 1883 when another Medical Practice Act and the first State Board of Medical Examiners were created.

The present medical laws were passed and have been modified from time to time. At the meeting of the Minnesota State Medical society in 1884, Dr. Millard stated that over 200 persons practicing medicine had left the state because of the requirements of the Medical Practice Act.

The Basic Science Law was passed in 1927 and materially raised the standards of all professions practicing the Art of Healing. In 1917 the Legislature passed a law making fee splitting, in any form, a serious offense.

Individual Physicians

The Minnesota State Medical Association holds an enviable position among the state medical societies of this country. This has been accomplished only through the untiring energy, the scientific achievements and the sincere and persistent efforts of its members, individually and by committees.

Among the great pioneers associated with medicine in Minnesota were Dr. Perry H. Millard of Stillwater, Dr. Charles N. Hewitt of Red Wing, and Dr. Martha G. Ripley of Minneapolis.

Dr. Perry H. Millard was a pioneer in medical education and the first dean of the University of Minnesota Medical School. He held this position until February 1, 1897, when he died of pernicious anemia.

Although the medical department was organized at the University of Minnesota in 1883, for several years the faculty was only an examining body which conferred diplomas on a very small number of candidates who presented themselves for examination.

In 1888 the College of Medicine and Surgery of the University of Minnesota was established, with Dr. Perry Millard as dean. The St. Paul Medical College and the Minnesota Hospital College voluntarily surrendered their charters, and men selected from their faculties formed the nucleus of the staff of the new school. First classes on the University campus were held in the original Millard Hall, a structure which is still in use on the old campus. Gradually, the other medical teaching institutions in the Twin Cities consolidated with the Medical School at the University, until the University of Minnesota became the only institution teaching medicine in Minnesota. Under the administration of President Vincent, the Medical School, as well as the whole University, became much stronger and more efficient.

The affiliation of the Medical School with the Mayo Foundation in 1915 and the development of the Continuation Center for postgraduate study at the University under Dr. W. A. O'Brien, in 1937, placed Minnesota among the best and most efficient postgraduate schools of medicine in this country.

Dr. Charles N. Hewitt was a pioneer in public health work and the first secretary and executive officer of the Minnesota State Board of Health,

which was organized by an act of the Legislature in 1872. Massachusetts had enacted public health legislation in 1869, and California in 1871. Thus Minnesota, in 1872, became the third among the states to make the health of its citizens a direct concern of the state government.

Dr. Hewitt had served with distinction as a major in the Medical Corps during the Civil War and was well qualified and trained as a health officer. He was instrumental in the passing of many important public health laws and inspired a large amount of public health education. For a short time he gave physical examinations to University students, the forerunner of our present excellent Student Health Service at the University. He urged universal vaccination, established a smallpox vaccine laboratory and advocated township nurses to care for patients during epidemics. In those activities and many others he was far ahead of his day. After twenty-five years of faithful service and leadership, Dr. Hewitt was not reappointed, and thus political considerations terminated his official service. Dr. H. M. Bracken succeeded him and was followed by Dr. C. E. Smith, Jr.

In 1921, Dr. A. J. Chesley, the incumbent, was appointed as secretary and executive officer of the Minnesota State Board of Health. During the last twenty-eight years, he has served with distinction, not only in the duties of his position but in his wholehearted co-operation with the Minnesota State Medical Association. He is nationally recognized in his chosen field, having been president of the American Public Health Association and president of the Conference of State and Provincial Health Authorities of North America.

Dr. Martha G. Ripley, pioneer woman physician, was born in Vermont in 1843. Soon afterward, she came to the Territory of Minnesota. She was the founder and, for many years, directing genius of the Maternity Hospital in Minneapolis, which was opened November 30, 1886. She devoted her many years of active practice to the special care of mothers and babies. The national reputation which Minnesota holds in its low maternal and infant mortality rate is in a measure due to her untiring efforts and scientific advancements.



Gillette Hospital

In the year 1896, Jessie Haskins, a slender, crippled girl read a paper before the Minnesota State Legislature on the need of a state institution for the care of indigent crippled and deformed children. The following year, she appeared again before the legislature, as did Dr. Arthur J. Gillette. Dr. Gillette offered to give free orthopedic treatment to all indigent crippled and deformed children, if such a state hospital were established. That same year a bill was introduced and passed which provided for the care of these unfortunate ones. The City and County Hospital of St. Paul assigned a ward exclusively for the care of these children, and during the first two years eighty crippled children were treated. In 1907, a group of citizens and business organizations of St. Paul gave twenty-three acres of land adjoining Phalen Park for the location of the present Gillette State Hospital for Indigent Crippled and Deformed Children. In 1909, the amount of $55,000 was appropriated for the building of this hospital and, in 1913, $60,000 more was appropriated for an addition.

Thus through the efforts of Dr. Arthur Gil-

lette, president of this Association in 1918, Minnesota became the *first state* in this country to appropriate funds and erect a hospital for the care of its indigent crippled and deformed children.



W. W. Will L. L. Sogge

From October 24, 1897, to January 1, 1949, 21,110 patients have been treated at this state institution.

Dr. Arthur Gillette was the first chief-of-staff and served as such from 1897 to the time of his death, March 21, 1921. Since that time, Dr. C. C. Chatterton has held this position. These men, along with twenty-five other prominent physicians and surgeons, representing various specialties, are members of the staff and give their time willingly and without compensation.

Miss Elizabeth McGregor has been superintendent since 1914 and, with her pleasing and understanding personality, has added much to the care and happiness of these children.

On September 24, 1886, Dr. Justus Ohage performed the *first* successful cholecystectomy in America at St. Joseph's Hospital in St. Paul. The patient lived for thirty-four years following her operation. Dr. Ohage was graduated from the University of Missouri in 1880. He served as commissioner of health in St. Paul from 1899 to 1918. During his term of office, in 1904 at the St. Louis Exposition, St. Paul was awarded a medal for being the healthiest city in the world. Dr. Ohage was president of our Association in 1895.

The General Practitioner

During the early territorial days, specialization in medicine was infrequent, and most physicians could be classified as general practitioners. After World War I there was an indication that the medical pendulum was swinging further and further toward specialization. This has become increasingly more pronounced since World War II. One of the main reasons for this was the preference and greater rank and pay given to medical officers during their period of military service. Naturally, many medical veterans, aided by their GI Bill of Rights, after their discharge selected postgraduate training in some special field rather than entering or returning to general practice. Unfortunately, many hospitals also began to demand a board certificate for membership on the staff. The U. S. Veterans Administration has been offering much higher pay to certified members. Medical students and interns were encouraged by the medical schools consciously or otherwise, to take postgraduate work leading to certification by one of the American specialty boards.

For a while it appeared as though the general practitioner were to become the forgotten man, instead of the indispensable one in our profession. He is the generalized specialist who handles skillfully and efficiently, at a minimum expense to the patient, over 85 per cent of all illnesses. He delivers the patient, treats his childhood diseases, guides him through his period of puberty, advises him about his marital problems, knows every detail of his heredity, his emotional conflicts and his personality reactions. He has been the guiding light, not for one, but for several generations of his patients' families. He is not only the general practitioner, but the real family doctor.

Among the outstanding general practitioners in the late eighties were Dr. H. M. Workman of Tracy, Dr. W. L. Beebe of St. Paul, Dr. L. H. Boyer of Duluth, and many others.

During the last three years the general practitioner has again been receiving well-deserved recognition as the first and last line of defense against disease. In 1946, the American Medical Association convention included, for the first time, a section on general practice. Several medical schools are devoting special courses to the training of general practitioners. Since 1947 the American Medical Association has elected, annually, the most outstanding general practitioner in the United States. He is chosen from a list of outstanding physicians submitted by the various state medical societies.

Being selected as the outstanding general prac-

titioner or family doctor in his state is the highest honor that can be bestowed on any physician by his own state medical society.

In 1947 this great honor was given to Dr. W. W. Will of Bertha, president of our Association in 1936, and, in 1948, it was given to Dr. L. L. Sogge, of Windom, president in 1931.

In 1938 the State Committee on Tuberculosis was organized under the chairmanship of Dr. J. A. Myers of Minneapolis. Within five years a sub-committee was established in each county of Minnesota. I have been informed that the Minnesota State Medical Association was *the first one* in this country to develop such an extensive anti-tuberculosis campaign. As a result, the tuberculosis mortality rate which was 30.6 per 100,000 population in 1938 was reduced to 17.7 per 100,000 in 1948.

In 1940 the State Committee for the Control of Medical Testimony was organized. The purpose of the committee was to maintain the highest level of ethical medical testimony in all the courts of our state and also to educate and censure and, when necessary, to refer to the State Board of Medical Examiners for disciplinary action any physician who seemed consciously to deviate from the truth. The Minnesota State Medical Association was the *first state* in the Union to discipline its own members who rendered questionable medical testimony in our courts, either due to ignorance, over-enthusiasm or prejudice. The work of this committee has received a national reputation and other state societies are developing similar plans. Its members have been invited to discuss this program, known as the Minnesota Plan, at medical meetings held in our own state, at Chicago, Atlantic City, Omaha and in Massachusetts. Articles on this subject have been published in Minnesota Medicine, the *AMA Journal,* the *Journal of the Omaha Midwest Clinical Society,* the *National Journal of the Association of Railway Claim Agents* and the *National Journal of American Insurance.* As a result, expert medical testimony in the courts of Minnesota has attained a very high standard of efficiency. Although there are thirty-six committees of the Minnesota State Medical Association, the above two were singled out because of the original contributions made in their special fields.

On April 8, 1949, through the efforts of Mr. R. R. Rosell, our executive secretary, and his staff, the Minnesota State Medical Association held a joint meeting of newspaper men and women and physicians at Minneapolis. At this conference, the various problems and opinions relating to medical ethics, medical news publication



Father Galtier's Chapel

and socialized medicine were discussed. One hundred and sixty-one editors attended. The meeting was a very instructive and educational one.

This was the *first* joint meeting of journalists and physicians on a state-wide basis ever held in this country, and I believe similar meetings will be conducted in other states in the near future.

The Woman's Auxiliary to the Minnesota State Medical Association was founded in Minneapolis October 13, 1922. The first meeting was held in Millard Hall, at the University of Minnesota, and Mrs. Horatio B. Sweetser, Sr., of Minneapolis, was elected as the first president. At this time there were already three existing county medical auxiliaries: Duluth, St. Paul and Minneapolis. The Hennepin County Medical Auxiliary, founded October 10, 1910, lays claim to the record of "*first* Auxiliary in the United States." There were forty members present at the first meeting, and Mrs. William J. Byrnes was first president. At present the State Auxiliary has 2,048 members. They have been a great asset in promoting and improving public relations, in increasing general interest in health problems and in educating the public in the national emergency that American medicine is facing today.

The Sisters of St. Joseph built the first hospital in Minnesota. It was a four-story stone building, erected in 1853 on the site of the present St. Joseph's Hospital in St. Paul. While the hospital

was still under construction, a cholera epidemic developed in St. Paul. Father Galtier's chapel, located on Bench Street, was opened as an emergency hospital, and the St. Joseph's Sisters nursed the sick. Thus the old log cabin became the first private institution for the care of the sick in this territory. After the Civil War hospitals were erected in increasing numbers and today Minnesota has excellent hospital facilities.

In 1870, the terminal of the Northern Pacific railroad entered Brainerd. Emigrants were taken by rail from St. Paul to Brainerd, then transported west by covered wagons. At Brainerd the railroad company erected a colonization home where emigrants remained till the covered wagons began their westward journey. If emigrants became ill, the colonization home was used as a temporary hospital. Similarly, when railroad employes in this neighborhood required hospitalization, the same facilities were utilized, thus the colonization home became the *first industrial hospital* in this country and the forerunner of the first NPBA hospital, erected in Brainerd in 1882.

Although the Blue Cross Hospital Insurance plan is considered of recent origin, as long ago as 1882 the lumberjacks of Northern Minnesota had a prepayment contract with two Duluth hospitals where hospitalization was furnished for $12 per year.

There are many other interesting episodes in the medical history of the Minnesota Centennial, such as the ultimate control of the widespread epidemics of smallpox, diphtheria, cholera and typhoid fever among the Indians and early settlers, the heroic deeds of the early medical missionaries, the military accomplishments of our Medical Corps, but time will not permit of their discussion.

The record of our pioneer medical men is an honorable one. We can also look ahead with a great deal of confidence. Minnesota is fortunate, indeed, to have a large number of young medical men located throughout the state, conscientious, capable and scientifically trained. They are willing to render the outstanding medical service that our public has been accustomed to for years. However, there are two definite dangers. There is a small group of medical graduates, ultra-scientifically trained, who employ all known laboratory methods, but neglect careful medical examinations, to arrive at a diagnosis. I like to refer to them as swivel-chair diagnosticians. They sit in their offices waiting for the laboratory reports instead of utilizing their five special senses in the study of these cases. They not only incur, sometimes unnecessarily, a large laboratory expense for the patient, but deprive themselves of the keen satisfaction of having solved a difficult diagnostic problem through their own efforts. Do not misunderstand me. I fully realize the importance of modern laboratory diagnostic methods, judiciously applied when indicated, but I also stress the value of meticulous case reports and detailed and repeated physical examinations.

The second grave danger, and this is quite universal, is the absolute indifference towards the medico-legal problems in our own Legislature and the national compulsory health insurance program being considered in Washington. Unless the young medical men of today awaken to these great problems and take definite action, they may discover tomorrow that they are deprived of their great heritage, to practice medicine the American way, as a free enterprise and without interference from a bureaucracy in Washington, a tragedy not only for the medical profession, but especially for the American public.

In closing, I quote from the first formal presidential address of the Minnesota State Medical Association, delivered by Dr. Samuel Willey, February 1, 1870, almost eighty years ago:

"Thus far, our meetings have been characterized by the utmost harmony—our number is rapidly increasing by the enrollment of good men from all sections of the state—and we may safely assert that the organization is already one of which not only ourselves, but the citizens of Minnesota, may justly feel proud. Our profession is not only governed by the code of laws of the AMA, but it has a natural code of laws, springing from a reciprocal system of feelings and sympathy pervading its members. May this sympathy and fraternal spirit ever animate us—and may our profession ever be our study, our pride and our enthusiasm."[3]

Fortunately, this still applies today.

1124 Lowry Medical Arts Bldg.

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ENDOMETRIOSIS

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THE HISTORY of endometriosis, contrary to that of many other conditions within the sphere of gynecology, is relatively a short one. As with most new subjects in medicine there was at first the inevitable confusion of terms, and it is only recently that the name itself has become generally accepted. There is still much to be learned before the problems relating to endometriosis are solved, a situation which will become increasingly apparent as this symposium proceeds. Much, however, of what has been accomplished is the product of American gynecologic effort. Two names in particular, which stand out in connection with the American contribution to whatever knowledge we now possess, should be mentioned. They are those of Cullen and Sampson.

According to Graves, Chiari, a German, was the first to mention endometroid growths in the literature. In 1887 he described small tumor-like knots in the tubal angles which he named "salphingitis isthmica nodosum." Soon after, similar growths containing both smooth muscle and glandular tissue were discovered in the wall of the uterus and were named "adenomyomata." From this time on, there appeared numerous reports, especially in the German literature, of the same and like conditions, with a variety of names. In 1896, Von Recklinghausen, through the publication of his studies, established the condition as a pathological entity with the designation of adenomyoma and cystadenoma of the uterus and the tubes. It is of interest to note, because of the controversy that was to develop, that he considered the growths to have their origin in Wolffian body rests.

In 1897, Cullen made the first American contribution to the literature. Nine years later this same author published a monograph on adenomyoma of the uterus, a work that was classic and one which is still considered monumental in the extensive literature which has accumulated around this subject. Cullen rejected Von Recklinghausen's idea of origin in Wolffian body rests, maintaining that his studies showed that the glandular elements in these lesions were of Mullerian origin, a concept which was later entirely supported by the meticulous work of Frankl and Robert Meyer, and others. The controversy in itself, while of profound academic interest, seems to have a greater importance because of the effect that the studies leading to its settlement had on the terminology applying to the condition.

Although a number of authors had previously suggested that these endometroid growths were of Mullerian origin, the impact of Von Recklinghausen's work was decisive, and his views were quickly and widely accepted. Following the contemporary custom of attaching a proper name to a disease, the growths became known in the literature as Von Recklinghausen tumors, a name which disappeared when Cullen reeestablished the Mullerian theory and adhered to the designation of the condition as adenomyoma.

When the latter studies such as those of Frankl and Meyer led to a more detailed knowledge of the cytology of the condition, the name adenomyoma was questioned as it connoted true neoplasm formation, especially after Robert Myer demonstrated the invasive nature of the basilar endometrium and further described a rare mixed tumor of the uterine wall which he proved was a true adenomyoma. Consequently, led by Frankl, the German school replaced the "oma" suffix with that of "osis" and the terms adenomyosis and adenosis were introduced, depending on whether muscle tissue or glandular tissue alone was present. The designation of adenomyosis interna and externa are still in favor in German, although the late Dr. Graves rejected the term adenomyosis externa because of the implication of the constant presence of muscular elements in growths outside of the uterus.

On the other hand, the German writers feel that Sampson's comprehensive title of endometriosis implies the acceptance of what they believe is an unproved hypothesis of endometrial transplantation. Sampson's work in this country from 1921 on resulted in the name, endometriosis, a condition which he described as the "presence of ectopic tissue which possesses the histological structure and function of the uterine mucosa. It also includes the abnormal conditions which may result not only from the invasion of organs and other

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PATHOLOGIC ASPECTS OF ENDOMETRIOSIS

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IN PATHOLOGIC terms, endometriosis means the occurrence of endometrial-like tissue beyond the confines of the uterine mucosal lining. Acceptance of this definition commits me to a description of two basic forms of the disease, namely, internal and external (or ordinary) endometriosis. In perhaps 12 per cent of cases both forms coexist. By internal endometriosis, or adenomyosis, or adenomyoma I refer to a condition in which normal endometrium invades, in nodular or diffuse fashion, the underlying myometrium. Invasion rarely proceeds as far as the peritoneal surface of the uterus but on occasions there may be extension into the regions of the broad ligaments. The uterus may be diffusely thickened by the process, or again, single or multiple nodules of variable size may be featured.

Internal endometriosis, in contradistinction to the ordinary or external form, is rarely associated with infertility. The tumors rarely pedunculate like fibromyomas and they rarely bleed. Malignancy originating in them is extremely rare, but because of their infiltrative tendencies, removal by the operation of "myomectomy" or, rather, "adenomyomectomy" is most difficult. When, as is usual, they develop decidual reaction during pregnancy they reputedly weaken the uterine wall and predispose to rupture of the uterus.

Microscopically in about 99 per cent the invasion is effected by both endometrial glands and stromal components. In 1 per cent, according to Goodall and a few others, stromal elements alone are present, and to this rare condition the term "stromal endometriosis" or "interstitial endometriosis" has been applied. The invading nodules exhibit a peculiar tendency to grow, wormlike, into veins and lymphatics. Metastasis has been observed. Many, in fact, doubt the existence of the condition as an entity, feeling that the few cases described are examples of low-grade leiomyosarcomas. We have seen no undoubted examples, and Dr. Meigs has stated that the records of the Massachusetts General Hospital reveal only one possible case.

This, in brief, is all I shall have to say about internal endometriosis, since the heterotopic tissues with which this discussion is concerned are those present on the outer surface of the colon, the ileum, the umbilicus, the bladder and other locations. To these the terms "external" or "ordinary endometriosis" have been applied.

The pathologic fundamental to keep in mind is that each focus of endometriosis is in itself a miniature uterus with functioning glands and stroma. Acted upon by the ovarian hormones, the tissue responds by going through all the phases of the menstrual cycle, forming decidua during pregnancy and atrophying with the menopause. Most importantly it *menstruates*. However, this ectopic tissue differs from its uterine counterpart, the normal endometrium, in two important regards, namely, (1) the underlying soil is poor, and (2) effective drainage is lacking. The poor-soil effect is seen in the tendency for the implants to burrow underneath the peritoneum, along tissue planes, and even to invade lymphatic spaces. Endometrium lacks a basement membrane, and invasion always proceeds beyond the lines which seem to limit the lesions grossly. Lack of drainage accentuates the factor of poor soil, for with the accumulation of menstrual blood, cysts of varying sizes form. Enlargement takes place as a consequence of repeated menstruation, and increasing intracystic pressure results in either a deeper burrowing of the endometrium or rupture of the cyst, with spillage of its contents and secondary implantation. This spillage produces adhesions which firmly glue together such structures as adjacent loops of bowel, and in endometriosis the adhesions are always stronger than the structures they unite. The utmost care must be exercised in dissecting free these adherent structures, for this reason.

In addition to these general features of endometriosis there are special considerations which pertain to involvement of certain structures. An account of some of these is worthy of a brief discussion.

Ovarian involvement is frequent, and it is bilateral in 70 per cent. Minor lesions consisting of small, puckered, reddish dimples on the cortical surfaces may be present, or again, large, perfor-

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ating, tarry cysts may excavate the entire substance of the ovaries. These may produce sterility from simple ovarian failure. Unfortunately the terms "chocolate cyst," "tarry cyst," and "hemorrhagic cyst" have been loosely employed to designate ovarian endometriomas. Hemorrhage into a cystadenoma can produce "tar," and bleeding into a follicular cyst, a corpus luteum cyst or even into a tubo-ovarian inflammatory cyst may impart to the contents of such a cyst a chocolate appearance. Yet none of these is an endometrioma. The best guide in the gross pathologic diagnosis is the existence, on the surface of an endometrial cyst, of brownish black puckered areas which, whether adherent or free, exude, on compression, a dark thick fluid. This phenomenon results from imperfect attempts at sealing over chronic recurrent perforations.

Although it is impossible to study microscopically the fate of these endometriomas over periods of years, there is circumstantial evidence that certain changes occur. Occasionally the cysts slough away their epithelial lining and contract down into small ovarian hematomas. A similar fate befalls many at the time of the menopause but in these, islands of atrophic endometrium may be found. In a certain number sizable cavities persist, and in these the glandular epithelium may remain as epithelia caps surmounting fibrous papillary cores—the so-called ovarian papillary cystadenofibromas. In an undetermined but, I am convinced, sizable number, the endometrial lining becomes malignant, being activated by the same hormones which produce carcinoma of the fundus uteri. The transition has been difficult to demonstrate convincingly, but the literature contains about a dozen undoubted examples. I have encountered one case which illustrates this most serious sequel of ovarian endometriosis.

In the fallopian tubes two forms of endometriosis exist. The first is an interstitial type which is comparable to uterine adenomyosis. This type distorts the lumen and is one of the common causes of ectopic gestation. Infertility results when obstruction is complete. In the second type the serosal surfaces of the tubes share in the seeding of pelvic external endometrial tissue. In this type the lumen of the tube is patent but, as a result of fibrous contraction the fimbriated end, is separated from the surface of the ovary by a distance exceeding the normal. This separation is reputedly responsible at times for the infertility observed in endometriosis.

The uterine lesions of external endometriosis are very common indeed, and they are encountered most frequently on the posterior surface. Ordinarily quite superficial, they may at times extend deeply, running down into the rectovaginal septum and occasionally ulcerating into the vagina or the rectum. Perhaps 10 or 15 per cent of these deep-seated lesions will be associated with uterine adenomyosis. However, it is felt that the rectovaginal endometriomas arise from the peritoneal component of the condition.

The gastrointestinal lesions of endometriosis center, for the most part, on the sigmoid and the rectovaginal septum. However, the terminal portion of the ileum, the cecum and the appendix are sometimes the seat of rather serious involvement.

Sigmoidal and rectal endometriomas represent extensions of cul-de-sac implants. They may ulcerate the rectum, the sigmoid or the vagina and may imitate carcinoma or diverticulitis. In thirteen clinic patients with lesions of this type, resection of involved bowel became necessary because of signs and symptoms of intestinal obstruction secondary to scirrhous napkin-ring constriction, obturation by a polypoid endometrioma, or acute angulation of the rectosigmoid. Three had experienced melena along with their recurrent comenstrual bouts of constipation. In a number of additional examples mild chronic intestinal obstruction was almost immediately relieved by bilateral oophorectomy.

In about 5 per cent of cases of endometriosis involving the terminal portion of the ileum the invasion is deep and extensive enough to produce chronic small intestinal obstruction. My colleagues and I have encountered three such cases and have reviewed the reports of thirteen additional ones in the literature. The condition is confused clinically with appendicitis and, at operation, with carcinoma of the small bowel. In the cases we studied, involvement of the wall did not proceed to the stage of mucosal ulceration. Thickening from infiltration and acute kinking from dense peritoneal adhesions were characteristic features. In half of the cases from the literature the ileal lesions were almost the sole evidence of endometriosis.

The peritoneum over the bladder is invaded in perhaps 10 per cent of cases of pelvic endome-

triosis, and in a small number of these there may be no other evidence of the disease apparent. Approximately 10 per cent of the cases are associated with deep penetration of the vesical wall and the production of cyclic dysuria. Mucosal involvement in 33 per cent of these cases of deep penetration produces periodic hematuria. In the fifty-odd cases in the literature reviewed in 1943 by Moore and his co-workers, approximately 60 per cent of the patients had had previous pelvic operations. Involvement when extensive is liable to produce puckering of the ureters and secondary hydronephrosis may result.

A much more frequent ureteral lesion, however, is that of kinking which is produced by the contracting fibrous tissue in an overlying endometrioma of the pelvic peritoneum. This results in drawing the ureters dangerously close to the cervix and making the operation of total hysterectomy hazardous from the standpoint of producing urinary fistulas.

These, then, are the principal lesions of endometriosis. Others exist as tumors of the umbilicus, abdominal scars, vulva, vagina, thigh and so forth. The basic pathologic condition is similar to that outlined in the foregoing. It is necessary in treating them to remember that each lesion has "roots" like a cancer and that excision must be wide if recurrence is to be avoided.

To summarize these pathologic features, it may be said that endometriosis is unique in that it represents invasion of normal tissues by equally normal and benign tissues of a different type. Its fires are fanned by the draft of the ovarian hormones, and its effects are produced mechanically as a result of periodic hemorrhage. Though the process is usually quiescent during pregnancy, an associated decidual reaction may weaken and cause rupture of the adenomyomatous pregnant uterus. The ravages of the disease, while ordinarily terminated by the menopause, may at times progress with the production of adenofibromas and adenocarcinomas of the ovary.

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COUNTY HEALTH DEPARTMENT

Minnesota's first full-time county health department to be set up under the new law passed by the 1949 legislature, which permits establishment of county, multi-county, and city-county health departments, is being organized in Hennepin County.

One of the key organizations behind the drive for a county health department has been the Hennepin County Health Council. Chairman of the group is Edwin J. Cooper, superintendent of schools at Robbinsdale. Members of the council include representatives of official and non-official health agencies, schools, professional persons, and interested county citizens. Also supporting the new department is the Hennepin County Public Health Nursing Committee.

At a meeting held in Minneapolis on June 8, representatives from all over the county unanimously passed a resolution to be presented to the county commissioners endorsing the rural Hennepin County health department plan. A similar resolution was passed a week later in Excelsior when representatives of eleven communities met to discuss the pollution problem of Lake Minnetonka.

Formally authorized by the county commissioners on June 28, 1949, a five-member county board of health, which includes a physician and a dentist, will select a health officer, subject to the approval of the State Department of Health. All small-city, village, and township health officers will be relieved of their tasks when the full-time health officer begins his duties. This will insure a single and unified administration of health laws for rural Hennepin County. Minneapolis, which has its own health department, will not be included in the county health department jurisdiction.

The new health officer will pick his staff members, with approval of the board of health as prescribed by law. Total budget for the department will be financed by a one-mill levy on rural Hennepin County residents. This will yield a tax return of 27 cents per capita from some 140,000 persons.

In the beginning, the department will spend about 85 cents per capita on the health program, which includes health department costs, public health nursing services, and local school boards' expenditures for school nurses. This is below the $1.50 per capita standard advocated by the American Public Health Association. All necessary services of a health department will not be available at first, but will be added when additional funds, probably from federal sources, will become available.—*Minnesota's Health*, July, 1949.

TUMORS OF THE OPTIC DISC

Report of Case

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TUMORS of the optic nerve are very rare. Clinically they may be divided into intraocular, intraorbital and intracranial. Of these the intraocular tumors, or those of the optic disc, which are the subject of this paper, are found least of all. In their early stages they may produce no subjective symptoms and may be found only by accident in a routine eye examination. Later they may cause loss of vision through encroachment on the macular region or through retinal detachment or glaucoma.

Tumors of the optic disc may be primary or secondary.

Duke Elder divides primary tumors of the optic disc into three types: (1) pigmented tumors, (2) tumors belonging to the group of phakomatoses, and (3) nerve tumors.

1. Pigmented tumors may be benign or malignant melanomata. A benign melanoma lies beneath the retinal vessels which pass over it, usually without change of direction or size. It is not always possible to be sure of its benign nature in one examination. If the growth increases in height as well as width, it is probably malignant, and the eye with as much of the optic nerve as possible should be removed.

2. The second type of primary tumors includes the group that are brought together under the heading of phakomatoses, which means mother cells. They are supposed to be misplaced embryonic cells which later develop into new growths and include angiomatosis of Lindau, fibromatosis of Recklinghausen and tuberous sclerosis of Bourneville. Closely associated with tuberous sclerosis and often found in the same patient are drüsen of the optic disc. Dr. A. B. Reese of New York has written a very comprehensive paper[4] describing this association. Drüsen, or hyaline bodies of the optic disc, have been described as resembling a mass of frog eggs or grains of tapioca or having a papular surface like a mulberry. When the bodies lie just below the surface of the disc, they may give an appearance of optic neuritis or papilledema. They are congenital and usually bilateral, and if small they may give no symptoms.

Dr. Reese states that during the last seven years at the New York Institute of Ophthalmology, nine cases with hyaline bodies in the disc were found in routine microscopic examination of 893 eyes that had been removed for other reasons. That would indicate that about 1 per cent of enucliated eyes show hyaline bodies in the optic disc. In the majority of cases drüsen of the optic disc are harmless, but they may become cystic and break into the vitreous. They are made up of calcium and a hyalin-like material. As they are often associated with optic atrophy, some think they may be the result of optic neuritis. Parsons considered them degenerate changes of an exudate. About 33 per cent of the patients with drüsen of the optic disc show disorders of the nervous system. The most common would include convulsions, psychoses, disturbances of gait and speech and hydrocephalus.

Tuberous sclerosis gets its name from its many cerebral areas of sclerosis resembling a tuber or potato. It is congenital and is usually associated with mental deficiency, epilepsy and tumors of one or more organs. Death often occurs in the second decade from status epilepticus. The skin lesion usually associated with it is a reddish brown papular rash that extends over the face, including the nose, in a butterfly like appearance. This skin eruption also occurs occasionally in patients with simple drüsen of the optic disc, and mulberry-like tumors of the optic disc have on a number of occasions been reported in cases of tuberous sclerosis. Renal disorders are often found in both groups. Dr. Ferdinand Koch considers the effect on the patient of drüsen of the optic disc, compared with that of tuberous sclerosis, as one of degree. "The former may never be noticed while the latter is progressive and ultimately fatal."

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3. The third type of primary tumors consists of the nerve tumors, mostly gliomatous in nature and mostly malignant.

Secondary tumors spread from adjacent tissue and take on the characteristics of the tissue involved. The ones usually met with are melanomata from the choroid and neuroblastomata from the retina. Neoplasms may also extend forward from the optic nerve and nerve sheath, such as gliomata and endotheliomata.



Fig. 1. Mulberry-like appearance of the tumor at the optic disc.

Metastatic tumors may be found but occur only in terminal cases. The treatment then is directed only to the relief of pain, for the patient has only a short time to live.

In the differential diagnosis one must consider massive blood clots in this region and also inflammatory masses due to syphilis or tuberculosis.

The patient I wish to report is a boy, twelve years old, who came to my office four years ago on account of poor vision in his left eye.

He was well developed, slightly over weight, with normal pupilary reactions. The external appearance of the eyes was normal. His vision in the right eye was 30/20 and in his left 20/200. Under a mydriatic, I found his retinoscopy results to be about +.50 sph. in each eye. The right fundus was normal, but in his left I found a light grey tumor nearly covering the optic disc. It extended into the vitreous several diopters, and the blood vessels on either side of it were normal in size. The tumor had the mulberry-like appearance of drüsen of the optic disc. The remainder of the fundus appeared normal, and the tension and fields of each eye were normal. He had a rash on his face (known as adenoma sebaceum) that consisted of a macular eruption of reddish brown spots appearing on a slightly pale skin. It appeared in the nasolabial folds, over the entire nose, and in the intraorbital region, giving it the butterfly-like appearance.



Fig. 2. Butterfly-like distribution of the reddish brown macular eruption on the face of the patient.

I have seen this boy several times since his first visit and find that his vision remains about the same. His deportment seems quite normal, and he works and plays like other boys of his age. He likes school and is in the seventh grade. There is no history of eye trouble or nervous disturbance among his three brothers or one sister or his parents or grandparents.

Summary

Tumors of the optic disc are rare. Primary tumors of optic disc are usually benign but should be kept under observation for any change in their appearance. Secondary tumors are usually malignant and require enucleation as soon as the diagnosis is established. When metastatic involvement is present, the only treatment is to make the patient comfortable for the short time he has to live.

The case reported was one of simple drüsen at the optic disc, benign in character but having the macular eruption on the face that is often associated with tumors of a more serious nature.

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IMPRESSIONS FROM EUROPEAN NEUROSURGICAL CLINICS

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THE PROBLEMS of a tourist are greatly simplified in this era by efficient travel agencies that arrange hotel accommodations and schedule transportation. During the past summer of 1948, European travel would have been almost impossible without this aid because of the large number of people throughout the world who journeyed to see the London Olympic Games in August. It was estimated that approximately 100,000 Americans were in England at this time. Norway and Sweden, which were visited during this trip, were congested with welcome visitors also. This entire journey was expedited by air travel. The nonstop Minneapolis to New York flying time was five and one-half hours. From New York City northward to Gandar, Newfoundland, the travel time was four and one-half hours. Gandar is the closest North American airport to the European continent and approximately forty transatlantic flights daily leave from or arrive at this international airbase. The flying time from Gandar to London occupied twelve hours of smooth passage. The trip from London to Stockholm was five hours; and from Stockholm to Oslo occupied two and one-half hours. Therefore, the entire trip each way of about 6,000 miles was traveled comfortably in about thirty hours.

The first visit to a medical clinic in Stockholm was at the Serafimerlasarettet, or the University's teaching hospital, where Professor Herbert Olivecrona directs the neurosurgical department. The neurosurgery service occupies eighty beds in a modern wing of the hospital devoted exclusively to its use. As in other European clinics visited, neurosurgery is associated intimately with the neurology service and has its own operating rooms and x-ray facilities. In this center there were two new and excellently equipped air-conditioned surgical rooms which were used daily.

Although this particular clinic serves Sweden principally, patients come from all parts of northwestern Europe. Because of the department's prominent reputation, a great deal of work has been accomplished here. More than 3,000 patients with verified brain tumors have now been treated. During this visit there were neurosurgical residents on duty from England, India, Italy, Latvia, Sweden, and the United States. Approximately twenty-five patients who had been operated upon recently for brain tumors were seen on rounds with Dr. Gustav Norlén, who was in charge of the clinic at this time. The patients were in good postoperative condition. The ideas expressed by the attending staff concerning methods of treatment and prognosis of various histological types of tumors of the nervous system seemed quite in accord with that of American clinics. X-ray therapy is used to a limited extent except in some of the rapidly growing neoplasms of childhood and in pineal and pituitary growths. The surgical technique witnessed was excellent and the operating was done very quickly. Here, as in Norway, an electrically driven trephine was used safely and satisfactorily, decreasing the time and work in reflecting the osteoplastic flap for cerebral exposure. Most of the procedures are done with local anesthesia. Penicillin is not employed routinely postoperatively in Scandinavia or England, but only in the presence of definite infectious processes.

The technique of cerebral arteriography has been well perfected in this clinic, and about 500 studies are made each year. Cerebral vascular displacement or various peculiarities in structure of the arteries and veins has proved important as an aid for identifying the intracranial disease. The contrast medium employed is much the same as our 35 per cent diodrast, and it is usually introduced by means of a needle passed through the skin into the carotid artery without surgically exposing the vessel. Many outpatients are studied in this manner. This is the best method for identifying intracranial angiomas, and at this clinic a series of over sixty has now been found. A large number of their some 200 annual verified brain tumors is studied by angiography.

Medullary tractotomy, or the Sjöquist procedure, is employed for most of the trigeminal cases. Only poor operative risks and individuals more than sixty-five years old are treated by the Frazier transtemporal method of rhizotomy. Alcohol injection of the trigeminal branches is very seldom done here. Occasional transitory ataxia

from disturbance of the restiform body occurs after medullary tractotomy but there have been very few complications. This operation has the advantage of desensitizing the face to pain and leaving touch sensibility intact. Much less keratitis has occurred than with the transtemporal operation in surgery for those having ophthalmic division involvement. Several patients were seen on rounds who had medullary tractotomy, and the results seemed excellent.

The supradiaphragmatic sympathectomy of Peet was the only operative method for essential hypertension here. They believed that the results were as good as those obtained using Smithwick's thoraco-lumbar operation; but, of course, this is not in agreement with the opinion of most American centers.

While in Stockholm, there was also an opportunity to visit the Südsjukhus which is the new modernistic 1,500 bed city hospital. The thirty-five-bed neurosurgical service here is directed by Professor Olaf Sjöquist. This is a busy clinic and at the time was conducted by Dr. Bjorksteen.

Professors Torbjoern Caspersson and Holger Hyden direct the Biological Laboratory at the Karlinska Nobel Institute which is on the outskirts of Stockholm. This University of Stockholm research laboratory is new and excellently equipped. One of the neurosurgical fellows was engaged there in studying histology of brain tumors using the new R.C.A. electromicroscope. Dr. Hyden has been responsible for developing malononitrile, a drug that improves nucleoprotein metabolism in cerebral cells. This has been used successfully in this clinic to improve the mental status of psychotic patients. He discussed this work and stated that 150 patients had been treated since 1945 with the best results having been secured in mental depression.

The visit to the neurosurgical clinic at Oslo's Rikshospitalet was most cordial also. Professor Arne Torkilden is in charge here. He had just returned from a four month's visit to Candada and the United States. Approximately 200 patients suffering from brain tumor are operated upon each year at this neurosurgical clinic, which is the only one in Norway. Here, too, this service has its own operating and x-ray facilities. About twenty-five brain tumor patients were seen during rounds. As in Professor Olivecrona's clinic, localization of brain lesions was dependent more on air studies and arteriograms than on neurological examination.

Professor Torkildsen carries out the pertemporal operation in cases of trigeminal neuralgia, but he prefers the medullary tractotomy for those who suffer ophthalmic division pain. He admitted no complications with the use of the Sjöquist procedure and had observed no particular keratitis in these cases. It was interesting to learn that he had been able to relieve the headaches in some typical cases of migraine with trigeminal rhizotomy. Prior to carrying out this operation, it was made certain that novocaine injection of the ganglion would provide relief of the unilateral cephalgia.

The employment of cortical area six excision for athetosis had not proved satisfactory at this hospital. Pyramidal tractotomy had provided good results in treatment for the tremors of paralysis agitans.

In cases of hydrocephalus, Professor Torkildsen very seldom practiced coagulation of the choroid plexus. He employed ventriculocisternostomy, together with x-ray therapy, in cases of malignant tumors of the third ventricle that obstructed the aqueduct. In case of benign aqueduct obstruction, as after meningitis in children, he preferred third ventriculostomy and carried out the Torkildsen procedure only if the third ventriculostomy became obstructed.

This clinic has been particularly responsible for the development of cerebral arteriography due to the great interest of Dr. Arne Engeset, who is in charge of x-ray, and Professor Torkildsen. Since 1938 over 3,000 arteriograms have been done here and only three transitory convulsions were witnessed as serious reactions among these. Per-Abradil, which is much the same as our 35 per cent diodrast, is used for the contrast medium, and as much as 80 cubic centimeters have been injected during the examination of one patient without ill effects. These clinicians were as serious as those in Stockholm in advising against the use of thorotrast as the contrast medium because they were certain that there were instances of malignancies of the liver and bone marrow due to thorotrast. Except in 1 or 2 per cent of all cases, the percutaneous injection into the carotid artery was successful without the need of exposing the vessel. Only a few subcutaneous hematomas had occurred, and these

were not serious. Sensitivity to the iodine-containing contrast medium was rarely encountered. Professor Torkildsen emphasized the desirability of employing cerebral arteriography for localization of brain tumors, especially in the presence of increased intracranial tension, because the patients were much less disturbed by this study than by ventriculography. Craniotomy and tumor removal were always carried out on the same day as ventriculography when the intracranial pressure was increased for the safety of the patient. However, the use of angiography permitted postponement of craniotomy until the following day without endangering the patient. Ventricular air study was frequently unnecessary because intra-arterial contrast medium not only indicated the tumor's location, but also its characteristic vascular pattern and source of the blood supply.

Professor Torkildsen had not carried out prefrontal lobotomy in large numbers for mental illness. He was impressed with the use of this procedure in the treatment of intractable pain. He believed that the various types of frontal lobe operations for mental illness must soon be comparatively evaluated so as to establish a uniform operation.

The London Hospital, with about 1,000 beds, is one of the largest voluntary hospitals in the city. It was rebuilt in the east end in 1800. Mr. D. W. C. Northfield, the chief neurosurgeon here, was on a holiday and Mr. Crawford was in charge. Their service occupies forty beds and they have their own operating theater. The neurosurgical service also maintains additional beds at Brentwood, an annex hospital.

One of the most progressive and stimulating centers visited was the National Hospital at Queen's Square, London, an institution devoted solely to the treatment of nervous system diseases. Mr. Wylie McKissock is in charge of neurosurgery in this center. He is an extremely energetic person and enjoys having visitors about. He is particularly well known because of his vast experience with prefrontal lobotomy for mental disease. He has carried out this operation in over 1,200 cases, and four to six year follow-up studies have been made on several hundreds of cases. There has been over an 80 per cent satisfactory result, particularly in patients exhibiting depression and obsession. The frontal leukotomies have been done mainly at outlying psychiatric hospitals where he has done as many as six or eight a day. Mr. McKissock employs low lateral frontotemporal trephine openings with small dural incisions and a brain needle is used as the dissecting instrument to decrease cortical scarring and obviate epilepsy. There has been 2 to 3 per cent mortality, mostly from hemorrhage. Aside from mental illness, he has employed frontal leukotomy for spastic torticollis with lasting cures in two cases and without a followup in the third.

It was interesting to learn that Mr. McKissock did not definitely favor either the transtemporal rhizotomy or medullary tractotomy in the surgical treatment for trigeminal neuralgia. His preference is for the posterior cranial procedure of Dandy with a small bone opening through which he divides the sensory roots.

Professor J. Paterson Ross is the director of surgery at the St. Bartholomew Hospital. For many years he has maintained a great interest in surgery of the sympathetic nervous system. Mr. J. E. A. O'Connell directs the neurosurgical service which has remained at an outlying hospital since the war.

Guy's Hospital is also located on the east side in London. It suffered considerable bomb damage and has not been entirely repaired. A neurosurgical department is being initiated there under the direction of Mr. Faulkner of Australia, who worked with Professor Hugh Cairns during the war years. Guy's Hospital also has a medical school on the grounds and a particularly interesting anatomy and pathology laboratory. The specimens are excellently prepared and mounted and are valuable in teaching. As in the other historic hospitals of London, the works of many famous investigators are preserved. The original kidneys employed by Bright in the description of his disease are still in this museum.

The Royal College of Surgeon's building in London has been quite completely repaired following the bombing which damaged Hunter's Biological Museum chiefly. The Hunterian Library in the upper part of the building remains unchanged.

One of the great centers of neurosurgery is contained in Oxford's Radcliffe Infirmary of the Nuffeld Institute. With Professor Hugh Cairns traveling in South Africa, and Mr. J. Pennybacker in Ireland, Dr. Schiller was in charge of the service. Dr. Ritchie-Russell directs the neurology service there. The twenty-two neurosurgical beds were filled principally with brain tumor

patients. Because of the scarcity of beds, almost no sympathetic surgery was done. The spinal and peripheral nerve surgery cases are done mainly at the Wingfield-Morris and Churchill Hospitals in Oxford. Cerebral angiography was considered favorably at this clinic, but the technique of exposing the carotid arteries for the injection proved the most successful.

A unique experience was enjoyed at the Radcliffe Infirmary in the treatment of tuberculous meningitis. The prevalence of tuberculosis in Great Britain has caused numerous children to become ill with meningeal infection. The frequency may be appreciated when it was estimated at a recent meeting in Dublin, Ireland, that 5 per cent of the intracranial lesions operated upon are tuberculous. In the cases of tuberculous meningitis, streptomycin was given intramuscularly daily. In addition, this drug was injected into the ventricles through cranial trephine openings in doses of 50,000 units daily for periods of one to two weeks. Intrathecal administration was found undesirable because of the obstructed circulation from arachnoidal adhesions. The therapeutic results were good, and it is wondered if they are not dealing with a different type of tubercle bacillus than is encountered ordinarily in the United States.

One of the most enlightening and interesting experiences of all was to visit the New York Neurological Institute and hear Dr. Lawrence Poole's elaboration of his frontal topectomy for mental illness, and to learn of the postoperative results from Dr. Robert Heath. Dr. Poole stated that his observations of personality changes following brain wounds in the war prompted him to investigate which frontal lobe cortical areas are dominant in perpetuating emotional stress, fears, and anxieties in mental illness. After considerable investigation it was discovered that surgical excision of Brodman areas nine and ten bilaterally was sufficient to produce the desired result without disturbing intellect or judgment. They were particularly happy with the effect because the unusual personality change of childish euphoria or apathy, associated at times with prefrontal lobotomy, was absent in their cases.

The operation, which is not particularly shocking, has been done safely in elderly and mentally deteriorated patients and occupies about two and one-half hours. Intratracheal anesthesia is used. A free piece of bone is removed from the forehead to expose the anterior poles of both frontal lobes. The cortex of Brodman areas nine and ten is excised on each side in a length of 5 centimeters, width of 3 centimeters, and depth of 1.9 centimeters. An average 30 grams weight of tissue is usually removed from each side. Subpial excision has not been found necessary. No convulsive seizures had occurred to date in the sixty-four patients who had been operated upon.

The operations had been done at the Neurological Institute and also at the Greystone Hospital in New Jersey. One month of psychiatric rehabilitation is carried on with each patient. These individuals have exhibited no particular electroencephalogram changes after topectomy. Dr. Poole has also carried out this operation in the treatment of pain with good results, but he stressed that the white matter association fibers on the inferior and medial parts of the frontal lobes must be divided also.

* * *

During the visits to these clinics it was gratifying to observe that almost equivalent progress was being achieved everywhere. There was much evidence of independent thought and research resulting in positive achievement at every center. Each staff had great interest in the activities at other hospitals, and also had wide knowledge of the accomplishments of others. This universal advance of neurosurgery is only an example of that in every other medical field.

ENDOMETRIOSIS

(Continued from Page 805)

structures by this tissue, but also from its relation to menstruation." Such a definition, possibly qualified by the adjectives interna and externa to denote the presence either within or without the body of the uterus, would seem to make the term, endometriosis, sufficiently comprehensive and yet definitive enough to encompass all of the extremely varied manifestations of the disease. One may then conclude, that the designation, endometriosis, is sufficient until other etiological relationships are established which can disprove or change the name.

DELAYED PRIMARY CLOSURE OF WOUNDS

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DELAYED primary closure of wounds, which proved so useful in war surgery, can frequently be used to advantage in private practice if we but remember there is such a thing.

Originally a delayed closure was referred to as a secondary closure and performed some time after the first two weeks or longer. It was found, however, that the skin edges only remained mobile for about ten days, and the undercutting necessary to approximate these edges frequently counteracted the advantages of waiting. Attempts were then made to accomplish closure while the tissues were still mobile and before edematous granulation filled the wound. The optimum time was found to be the fourth or fifth day.

Why resort to delayed closure in the first place? Winnett Orr and Trueta proved the efficacy of *not* closing certain wounds. This proved most effective in grossly infected wounds but resulted in foul-smelling plasters over long periods of time and extensive fibrosis of tissues. Reconstructive procedures such as bone grafts and nerve sutures were unduly delayed. The routine use of primary suture, however, will result in suppuration and disruption in certain wounds. Hence the necessity for a third alternative arises.

Indications for Delayed Primary Closure:

1. Grossly contaminated crushing wounds.
2. Wounds in debilitated persons or ischemic limbs.
3. Infected wounds, including compound fractures not treated early.
4. Chronic infections, including osteomyelitis and diabetic ulcerations.

What Does Delayed Closure Accomplish?

1. It permits reactionary swelling to subside and so avoids tension with subsequent breaking-down of the wound.
2. It permits separation of non-viable tissue.
3. It provides intact skin coverage at the earliest opportunity.

Delivered at a special section meeting on orthopedic and fracture surgery in connection with the ninety-sixth annual meeting of the Minnesota State Medical Association, May 9, 1949, Saint Paul, Minnesota.

Technique:

1. Through surgical debridement at the earliest opportunity.
2. Light dusting with an antibiotic.
3. Light packing with dry gauze.
4. Immobilization.
5. Supportive therapy including blood, antibiotics and vitamin C.
6. Delayed primary closure on fourth or fifth day.
7. Immobilization.

Surgical debridement does not render a wound bacteriologically clean, but it deprives the organisms of food on which to thrive, namely, dead tissue. It provides the wound with walls of normal healthy tissue with an intact blood supply, the best barrier to bacterial invasion. The would-be invaders remain only contaminants.

Light packing with dry gauze keeps the skin edges apart. Firm even pressure should be maintained throughout the wound. This packing must *not* act like a tight "cork" and so defeat its very purpose.

The delayed primary closure should be obtained with widely spaced and deeply placed interrupted sutures. An occasional vertical mattress suture everts the skin edge and affords better approximation. Releasing incisions which can themselves be skin-grafted, are sometimes necessary to avoid tension. If tension cannot be avoided, it is better to accept a partial closure and complete the skin coverage later by whatever skin grafting procedure seems indicated.

If on the fourth day the wound still appears dirty and further debridement is necessary, this should be done, followed by a day or two of continuous wet dressings before completing the closure.

In conclusion, I would like to draw attention to the use of such a technique in dealing with some of the smaller diabetic ulcers and sinuses in the lower extremities. Thorough surgical debridement, including dead bone, is again a most important preliminary. Delayed primary closure will frequently succeed in closing such lesions, so notoriously resistant to convervative management.

DIFFERENTIAL DIAGNOSIS IN PULMONARY SHADOWS OBSERVED ON X-RAY FILMS

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AS MASS chest x-ray examinations involve more people, certain statistical observations become established as expected findings. Minnesota Department of Health experience in over 500,000 film examinations in rural Minnesota shows that we may expect 1.5 per cent of the general population six years of age and over to have some pulmonary shadow which the roentgenologist considers abnormal.

The observed shadows may be minimal or extensive, localized or disseminated, fibrotic, nodular, pneumonic or ulcerative. The findings vary from patient to patient, but most commonly one observes a combination of densities. At times the shadows will follow a pattern which will enable the roentgenologist to give his impression of the underlying cause. Since a number of diseases may produce, at some stage of their development, similar patterns, the roentgenologist, therefore, does not intend thereby to make a firm diagnosis but rather to offer a clue for immediate clinical evaluation. As stated by Overholt and Wilson,[2] surveys discover but do not diagnose disease, and they emphasize the fact that time is a traitor to pulmonary diseases. Wangensteen has given four cardinal points setting forth what a clinician desires from an x-ray film examination.

"1. Information to confirm the diagnosis tentatively made on the basis of history and physical examination.

"2. Information to exclude certain diagnostic possibilities.

"3. Information which may lead to a diagnosis not previously thought of.

"4. Information as to the details of the pathological anatomy present."

Medical literature continuously reveals reports, which are becoming increasingly significant, wherein the simulation of one disease by another makes it mandatory that an adequate clinical evaluation follow the abnormal film findings. All of the authors decry the danger of waiting for time to establish the seriousness of the lesion.

Today we are confronted with the necessity of developing a new approach in our differential diagnosis of pulmonary shadows. Patients are seeking medical advice on the basis of x-ray findings and not because some symptom or sign has disturbed them. Even careful histories may fail to elicit any lead as to the nature of the existing abnormality. Since mass surveys cover an entire community within a given time, the findings are a cross section and reveal the diseases present in various stages. Thus we see incipient, latent or advanced; acute, subacute or chronic; primary or secondary phases of one or more diseases in one or more patients. Obviously some persons with characteristic symptoms or signs will also be x-rayed, but they as a group do not present any great diagnostic problem. By the time such signs or symptoms present themselves, the x-ray shadows, too, will in the majority of cases fall into a classical pattern.

In order to point out some of the aids to be considered in differential diagnosis, a series of cases will be presented. Figure 1 illustrates the diagnostic aids recommended. This does not mean that a clinician will require every aid listed before a diagnosis can be made, as obviously, in many cases, a diagnosis will be made without any extensive search.

With Figure 1 in mind, the following illustrative cases are presented:

The first series of two cases includes those persons with rounded densities in the subclavicular area. In both of these cases thoracotomy was required before a definitive diagnosis could be made. However, tissue studies revealed entirely different situations.

Case 1.—A woman, aged thirty-eight.

History: Tuberculosis exposure to roommate twenty years ago. In 1935, Mantoux test was positive. From 1935 to 1939 repeated chest x-rays were all negative.

Past Illness: In April, 1944, there were complaints of stomach distress, cramps and diarrhea, and weakness.

Present Illness: Weakness was noted in April, 1944, which continued. In August, 1945, pulmonary shadow was found on x-ray. Patient was admitted to sanatorium with diagnosis of minimal A tuberculosis.

Physical examination was negative.

Presented at a special session of chest physicians at the ninety-sixth annual meeting, Minnesota State Medical Association, Saint Paul, Minnesota, May 9, 1949.

X-Ray Findings: Localized infiltration in left apex, probably tuberculous. Repeated x-ray examinations during residence showed no change.

Sputum: Patient did not raise sputum. Four gastric washing specimens were cultured and no tubercle bacilli found.

Blood: Hemoglobin, 15.3, white cells 7400, polymorphonuclear cells 69.5 per cent, lymphocytes, 25.5 per cent, monocytes, 3.5 per cent. Sedimentation rate, 11 to 9.

On November 3, 1945, the patient was discharged with a diagnosis of minimal tuberculosis, unimproved.

Follow-up: Chest x-ray examinations were repeated every one to three months. Patient developed severe chest colds during 1947-48. In March, 1947, x-ray film showed increase in infiltration, and on basis of findings thoracotomy was done. Diagnosis at time of thoracotomy, and confirmed by tissue section was inoperable carcinoma.

Case 2.—A woman, aged thirty-seven.

History: In July, 1947, survey film revealed a nodular density in the left first interspace, and case was referred to private physician. On April, 1948, follow-up film revealed the rounded nodule definitely enlarged with a hazy border.

Present Illness: In May, 1948, there was no change on x-ray film. Mantoux test was positive. Patient was admitted to sanatorium as tuberculous. She had no symptoms.

Physical examination was negative.

Tuberculin test was positive to 0.00002 mg. PPD.

X-Ray Findings: In July, 1948, a dense, discreet infiltration was seen in left first interspace, giving impression of tuberculosis or tumor. On August 23, and September 7, 1948, follow-up x-ray examinations revealed no change.

Sputum: No cough or expectoration was present. Three gastric washing specimens were cultured and no tubercle bacilli found. One gastric washing specimen was inoculated into guinea pig; no tubercle bacilli were obtained.

Blood: Hemoglobin 14.4, white cells 6500, polymorphonuclear cells 52.5 per cent, lymphocytes 35.5 per cent, monocytes 9 per cent. Sedimentation rate, 17 to 22.5.

Bronchoscopy: Secretion was obtained from trachea and left main bronchus. Questionable submucous tubercle was seen. No carcinoma cells were found. Bronchial and tracheal aspiration material was cultured and inoculated in guinea pigs; no tubercle bacilli were present. At this time the diagnosis was deferred but thought to be nontuberculous.

Thoractomy: Segmental resection was done. Tissue study revealed tuberculosis.

The next series of two cases are those with shadows in the lower lobe. These two were chosen because of similar appearances on x-ray examination and in both cases "time" was disregarded. Fortunately, in one case delay was unimportant.

Case 3.—A woman, aged thirty-eight.

History: Survey film on October 10, 1946, revealed a rounded area of increased density in the right base. Case was referred to private physician. On October 24, 1946, the history and physical examination were negative. Patient was advised to disregard x-ray findings.

After patient had severe flu, x-ray follow-up examination on January 27, 1947, showed a density 5 cm. by

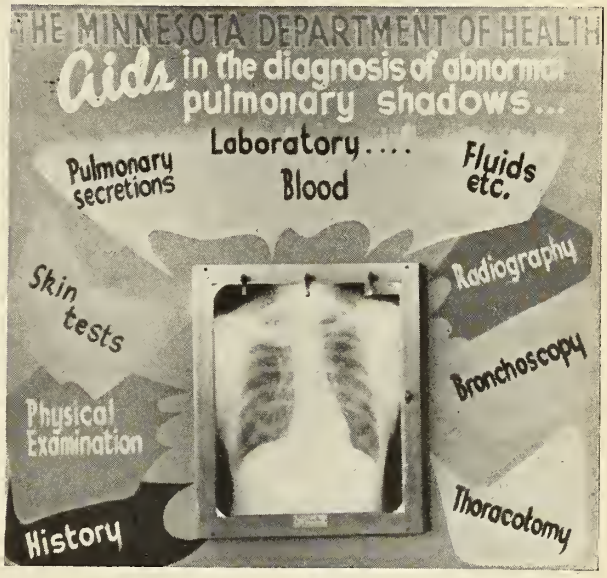


Fig. 1. Diagnostic aids in the clinical evaluation of abnormal pulmonary shadows.

6 cm., nature undetermined. Lateral film was taken. Possible biopsy was considered.

Mantoux test was positive in January, 1948. X-ray follow-up examination showed no change. Lateral was taken. Roentgenological diagnosis was pleural plaque.

In January, 1949, x-ray follow-up examination showed no change. Lateral film examination confirmed diagnosis of pleural plaque.

Case 4.—A woman, aged forty-nine.

History: Survey film in March, 1947, revealed findings of pericardial adhesions, increased density right lower lung.

Bronchoscopy in January, 1948: Pulmonary secretions were negative for cancer cells. There was a depression in right middle lobe bronchus. Sputum: Three gastric washing specimens were cultured and no tubercle bacilli found.

In March, 1949, x-ray examination showed increase in mottled infiltrations bilaterally. Symptoms: Loss of weight, considerable coughing. Diagnosis: Extensive carcinoma with localized metastasis.

The next series of two cases are those with upper lobe infiltrations with suspected cavitation. The first case poses many problems in differential diagnosis while the second case was quickly diagnosed.

Case 5.—A woman, aged twenty.

History: Weight loss (25 pounds) since March, 1938.

In September, 1938; Cough and expectoration, hemoptysis 1 dram. In October, 1938: Mantoux was positive; x-ray findings revealed tuberculosis, and patient was admitted to sanatorium.

Physical Examination: Left, dullness and fine post-cough râles from the second to fifth rib anteriorly.

Sputum: Seventy sputum examinations were negative; specimen was inoculated in guinea pig, and no tubercle bacilli were present.

Blood: Hemoglobin 75, white cells 20,750, with 89.5 per cent polymorphonuclear cells. With white cells at 30,100, there were 91 per cent polymorphonuclear cells, 6 per cent lymphocytes, 3 per cent monocytes. Sputum study showed numerous eosinophiles and neutrophiles but no tumor cells.

Bronchoscopy was negative on two occasions.

X-ray Findings: Lung abscess or atypical tuberculosis.

April 12, 1939: Discharged.

October, 1942: Admitted to General Hospital; pneumonectomy attempted.

October 30, 1942: Died.

Autopsy Findings: Bronchiogenic carcinoma.

Case 6.—A man, aged eighty-eight.

History: X-ray examination in 1944 showed possible tuberculosis, probably inactive. No follow-up by patient's physician. On May 4, 1948, a survey film revealed infiltration at both uppers suggestive of reinfection tuberculosis, with a suggestion of a cavity. Patient had loss of weight (25 pounds), an urge to cough, pain in the left chest, and a sensation of a full chest.

In July, 1948, Sputum was positive for tubercle bacilli.

On August 5, 1948, Patient was admitted to sanatorium.

The next five cases are an assortment to illustrate the diagnostic aid or aids (italics) which helped the clinician to determine the definitive diagnosis.

Case 7.—A man, male, aged sixty-one.

History: On April 26, 1948, a *survey film* revealed a homogeneous density over entire right side, obliterating entire lung field.

Physical Examination: On July 20, 1948, showed dullness over lower one-half right chest; otherwise it was negative.

Blood was normal.

On September 20, 1948: Patient admitted to University Hospital. Asymptomatic except for some exertional dyspnea for about one year. Blood pressure was 140/90; pulse 80; respiration 20; temperature 99°. There was a massive pleural effusion on the right.

Laboratory: Urine was negative; white cells 7,200; differential normal; sedimentation rate 89 mm. in one hour.

X-Ray Findings: Pleural effusion on right and soft infiltrative lesion in left upper.

Bronchogram: Partial atelectasis of the entire right lung.

Study of Fluid: Early examination failed to reveal tubercle bacilli. Ultimately many acid fast bacilli were found.

October 26, 1948: Discharged from University Hospital with diagnosis of moderately advanced tuberculosis.

November 4, 1948: Admitted to sanatorium.

Case 8.—A man, aged thirty.

History: On February 2, 1949, he reported to physician because of severe cough and cold.

X-Ray Findings: February 4, 1949: Infiltration in left middle and lower lung field, probably representing a pneumonia. March 7, 1949: Some clearing of pneumonic process. Examination showed hemoptysis for twenty-four hours, temperature 98°, questionable râles in right apex. White cells were 10,600, sedimentation rate 3 mm.

Sputum: March 11, 1949—negative. March 31, 1949—positive. April 4, 1949—positive.

Diagnosis: Acute primary tuberculosis.

April, 1949: Admitted to Veterans Hospital.

Case 9.—A woman, aged twenty-eight.

History: December, 1937—dry cough during pregnancy. April, 1938—cough dry but severe, treated as bronchitis. May, 1938—tuberculin negative. June, 1938—x-ray examination revealed exudative pulmonary tuberculosis. June 29, 1938—admitted to sanatorium.

Additional History: Frequent attacks of coughing and wheezing as often as two times a week.

Physical Examination: Temperature up to 102°, pulse 120.

Tuberculin Test: PPD and MA 100 were negative.

Sputum: Fifteen smears were negative; stool and gastric washing specimens were inoculated in guinea pig, but no tubercle bacilli found.

Blood: Hemoglobin 78 per cent, white cells 12,400, with 17.5 per cent eosinophiles. *Repeated test for eosinophilia*—7.5 to 16 per cent.

November 5, 1938: Discharged.

Diagnosis: Loefflers syndrome.

Case 10.—A woman, aged sixty-one.

History: *Had pneumonia thirty-five years ago* with cough and expectoration. Raised *30 to 50 c.c. of sputum* daily since. General health was good to December, 1942. In February, 1943, had fatigue, severe cough, later dyspnea, anasarca, and ascites.

Admitted to sanatorium on March 16, 1943. X-ray examination revealed cavities with fibrosis. *Repeated sputum examination* failed to reveal tubercle bacilli.

Diagnosis: Chronic interstitial pneumonitis—nonspecific.

Case 11.—A man, aged thirty-four.

History: Sandblaster from 1929 to 1937. March, 1939—pneumonia with pleurisy left; fever 104°, no x-ray. September, 1939—fever 103°, dyspnea, chills, et cetera, but back to work in four days.

October, 1939—dysnea and loss of weight (10 pounds) three weeks prior to admittance; slight expectoration with bleeding ten days prior to admittance.

Tuberculin Test: Negative O.T. 0.01 and 0.1 mg.

X-Ray Findings: Atypical for silicosis but possible.

Sputum: Ten examinations were negative; stool and gastric washing specimens was inoculated in guinea pig, but no tubercle bacilli found.

Vital Capacity: 1800 to 1900 c.c.

Blood was normal, sedimentation rate 109 mm. in one hour.

Autopsy: Silicotic nodules; no tuberculosis; right heart failure. Pure silicosis.

Summary

In this short period I have attempted to emphasize the following facts:

1. X-ray film examinations do not in themselves necessarily make a diagnosis in any given case even though the pattern might be suggestive of a specific disease entity.

2. In reaching a definite diagnosis it is well to bear in mind certain diagnostic aids or steps to be followed.

3. Patients who are found to have some pulmonary lesion on surveys report to the physician as a result of x-ray findings rather than because of some sign or symptom.

4. Procrastination may lead to an irreversible situation if the more serious diseases are not diagnosed within a short period of time.

The author wishes to express his appreciation to Dr. Sumner Cohen, assistant medical director, Glen Lake Sanatorium, for his assistance in procuring the clinical studies of some of the cases illustrated above.

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Discussion

Sumner S. Cohen, M.D.: The primary purpose of the mass x-ray type of examination is to aid in the diagnosis of early pulmonary tuberculosis. Minimal x-ray shadows should not be disregarded just because they are small, since early active tuberculosis usually begins as a minimal infiltration. Active minimal tuberculosis generally is asymptomatic, so the absence of local or constitutional symptoms need not eliminate the possibility of active tuberculosis. The final diagnosis of etiology and activity of obscure x-ray shadows is the responsibility of the clinician and should not be based exclusively on x-ray appearance. When tuberculosis is suspected, complete clinical study is indicated and should include history, physical examination, tuberculin tests and sputum or gastric studies for tubercle bacilli. In doubtful cases, additional studies such as special x-rays, bronchoscopy and bronchograms, may be necessary. The initial x-ray examination often indicates the need for long-term follow-up even though the x-ray shadows are interpreted as inactive tuberculosis at the first examination. The final success of the mass x-ray program will depend upon accurate diagnosis and the institution of indicated treatment as soon as possible.

TUMORS OF THE OPTIC DISC

(Continued from Page 810)

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Discussion

Dr. H. L. Bair: The case which Dr. Bray has presented is very interesting. According to the literature, drüsen of the optic disc occur in about 1 per cent of eyes removed and examined histologically. As Dr. Bray mentioned, a possible relationship has been established between drüsen of the optic nerve head and tuberous sclerosis. The retinal lesions that have been described as associated with tuberous sclerosis are not exactly the same type as the usual drüsen of the optic nerve. Those which I have seen were smoother and did not have the well-defined mulberry formation of typical drüsen of the optic nerve. From the appearance of the lesions in the fundus of this patient, I would classify the disease as tuberous sclerosis. This diagnosis, of course, generally implies a poor prognosis. Only observation over a long period of time will determine this.

Dr. Bray: I wish to thank Dr. Bair for his discussion of this subject. There are no doubt many cases of drüsen of the optic disc that are not found in the ordinary routine fundus eye examinations. The patient presented has made a good adjustment both in school and in outside activities. This and the mulberry appearance of the optic disc lead me to believe that he will never have any serious complications.

History of Medicine In Minnesota

MEDICINE AND ITS PRACTITIONERS IN OLMSTED COUNTY PRIOR TO 1900

NORA H. GUTHREY
Rochester, Minnesota

(Continued from July issue.)

Practitioners of Medicine in Olmsted County

Not until 1854 did the still undefined Olmsted County receive a resident physician of the regular school of medicine. From that year forward there came practitioners of all types, from graduates of the best medical schools† to bonesetters, herbalists and so-called magnetic healers, and in time a horde of itinerant practitioners of every known variety.

The first resident physician of the regular school in the county, Dr. Hector Galloway, arrived in Oronoco in 1854 with the little group of men who founded that village; although it is said that Dr. Galloway did not remain at the time of his first arrival, his association with the county began then. In the spring of 1855 Dr. Martin T. Perrine came to Rochester, Dr. Jesse N. McLane soon followed, and Dr. Reuben N. Sackett settled in Quincy Mills. In 1856, Dr. Ira C. Bardwell and Dr. Cornelius S. Younglove came to Rochester, Dr. J. C. Cole to Marion, and Dr. G. W. Green to Pleasant Grove. In 1857 Dr. Lewis H. Kelley, who built the first brick block in Rochester, settled in the city, and in 1858 came Dr. Edwin C. Cross and Dr. Joseph A. Leonard, the latter then beginning his distinguished career as editor and statesman. In 1859, Dr. Alexander Grant was a cultured newcomer in High Forest, and in 1860, Dr. E. W. Cross was outstanding among the several physicians who entered practice in Rochester. Dr. Staunton B. Kendall in 1862 settled on a farm in Kalmar Township, from which he moved three years later to near-by Byron. In 1863 there came to Rochester Dr. W. W. Mayo, who was to be for many decades a prominent citizen of the city.

The following chronological roster, as far as information has been available, includes all the recognized members of the medical profession who practiced in Olmsted County in the nineteenth century. In addition it gives, because they were typical of many and played a definite part in early medical practice, a few "magnetic healers," an herbalist or two, and a few practitioners of short residence who perhaps were better classed as itinerant. Of the total list, twelve were women, resident in the county between 1860 and 1900. Of the regularly qualified practitioners, some twenty-five were members of the staff of the Second Minnesota Hospital for Insane* (opened in 1879; since early 1893 named the Rochester State Hospital) in the period from 1879 to 1899, inclusive.

It will be noted that among the practitioners of medicine in Olmsted County, during the decades under consideration here, were numerous representatives of eclecticism and homeopathy. Some of them, like certain exponents of the regular

†Because in a recent article, *Notes on the History of Medicine in Fillmore County Prior to 1900* (Guthrey), much information was given as to the types of regular physicians who came into southeastern Minnesota in the early years, their professional training and the medical schools from which they came, such discussion is omitted here.

*In a brief sketch of the Second Minnesota Hospital for Insane, in this paper, is included a condensed chronological record of the service of these men. In the present roster their status as members of the staff of the state hospital is indicated. Biographical notes on these physicians are included in the alphabetical series of sketches that completes this history.

school of medicine, moved on after a few years. Many of them remained a lifetime in the county or in the region and, among the most highly respected and most frequently consulted of the county's physicians, were leaders in citizenship and in the care of the sick. Of these, all kept abreast of their profession, studying at intervals at universities and hospitals in Chicago and in the East. Many of them in due course became active members of the regular county, regional and state medical societies.

The roster indicates as nearly as possible the time of arrival of the physicians in the county and gives the first known village and township of the residence of each. Many physicians came from the East; some of these remained a short time, others spent decades in one locality, and others moved from place to place in the county. It has been interesting to note that the marriage of physicians to daughters of pioneer citizens of the county often determined the place of residence of the physicians. Dakota Territory in the early eighties became a goal of immigration to many citizens of Olmsted County, among them numerous physicians.

Some of the physicians listed here were born in Olmsted County and spent their lives there. Others came as children of pioneer parents, received their early education in the county, their medical schooling elsewhere, and returned to the county to practice. Of some physicians the exact date of arrival is known; of others it can be stated only that they arrived in the sixties, before 1866, for example, or that they were long in southern Minnesota but not actually in the county until late in the century. In the biographical sketches which are to come these facts are made clear whenever possible.

Chronological Roster of Physicians of Olmsted County Prior to 1900

Name	School[1]	Year of Arrival	First Place of Residence	Township
Alexander, Joseph	Herb	1854	Rochester[2]	
Galloway, Hector	R	1854	Oronoco	Oronoco
McLane, Jesse N.		1855	Rochester	
Perrine, Martin Thompson	R	1855	Rochester	
Sackett, Reuben Nathaniel	R	1855	Quincy Mills	Quincy
Smith, John Van	E & Mag.	1855	farm	Cascade
Bardwell, Ira C.	R	1856	Rochester	
Cole, J. C.	R	1856	Marion	Marion
Green, G. W.	E	1856	Pleasant Grove	Pleasant Grove
Younglove, Cornelius S.	R	1856	Rochester	
Kelley, Lewis Halsey	R	1857	Rochester	
Cross, Edwin Childs	R	1858	Rochester	
Leonard Joseph Alexander	R	1858	Rochester	
Chase, Stillman		1859	Pleasant Grove	Pleasant Grove
Grant, Alexander	R	1859	High Forest	High Forest
Tucker, Laban	R	1859	Rochester	
Cross, Elisha Wild	R	1860	Rochester	
Easton, Lucy J. Bolt (Mrs. J. H. Easton)	Mag.	1860?	Rochester	
Hunt, ———		1860?	Pleasant Grove	Pleasant Grove
Stone, B. F. G.	R	1860	Rochester	
Westfall, Isaac M.	H	1860	farm	Rochester
Cole, E. G.		1862	Rochester	
Fletcher, F. L.		1862	Rochester	
Kendall, Staunton B.	H	1862	Byron	Kalmar
Thoms, W.		1862	Rochester	

[1]School of medicine is indicated on basis of official record or other presumably authentic evidence. Designation is omitted in the absence of adequate evidence.

[2]Rochester lay (and lies) in two townships, Rochester and Cascade; the chief business section has always been in Rochester Township. In this roster, attempt is not made to state the township in which physicians of Rochester were resident.

Name	School[1]	Year of Arrival	First Place of Residence	Township
Anderson, Ole W.		1863?	Rochester	
Dyer, M. N.		1863	Rochester	
Hicklin, Mrs. Mary	E	1863	Rochester	
Hyde, W. A.	E	1863	Rochester	
Mayo, William Worrall	R	1863	Rochester	
Allen, Joseph L.	R	1865	Rochester	
Chase, O.		1865?	High Forest	High Forest
Clifton, Housen G.	Cancer	1865	farm	Rochester
Clifton, William W.	Cancer	1865	farm	Rochester
Elder, Alexander		1865	Rochester	
Rogers, Harvey Nehemiah	E	1865	Oronoco	Oronoco
Swan, C. J.		1865	Rochester	
Swan, T. J.		1865	Rochester	
Teel, Charles E.	R	1865	Eyota	Eyota
Weber, H.	German	1865?	Rochester	
Wilkins, Henry W.		1865	Salem Corners	Salem
Aiken, L. H.		1866	Rochester	
Chapman, James H.	Herb	1866	farm	New Haven
Reese, J. E.	E	1866	Eyota	Eyota
Culver, Nathan S.	E	1867	Rochester	
Eaton, Roswell		1867	Rochester	
Reynolds, Reginald Maxwell	R	1867	Rochester	
Roys, Miss E. M.	R?	1867	Rochester	
Beckwith, Edmund	H	1868	Rochester	
Bell, J. S.	H	1868	Rochester	
Groesbeck, Stewart V.	E	1868	High Forest	High Forest
Hyde, A. T.		1868?	Rochester	
Kendall, Burney J.	R	1868	Marion	Marion
La Rue, Benjamin F.	R	1868	Eyota	Eyota
Fairchild, David Sturges	R	1869	High Forest	High Forest
Preston, Miss Harriet E.	R	1869	Rochester	
Denninger, Paul G.	H	1870	Eyota	Eyota
Farrand, John N.	R	1870	Oronoco	Oronoco
Martin, John Lewis	H	1870?	High Forest	High Forest
Sadler, Orin W.	R	1870?	Byron	Kalmar
Sanborn, Francis Asbury	R	1870	Rochester	
Bothwell, Wendell G.	R	1871	High Forest	High Forest
Nichols, George W.	R	1871	Rochester	
Slocum, Julius Francis	R	1871	Marion	Marion
Allen, Wilson Adolphus	H	1872	Rochester	
Kilgore, Horace F.	H	1873	Pleasant Grove	Pleasant Grove
Lowe, J. Quincy A.	R	1873	Rochester	
Stinchfield, Augustus White	R	1873	Eyota	Eyota
Bedal, M. D.	R	1874	Rochester	
Gould, Seth Watkins	E	1874?	Rochester	
Martinitz, St. V.	E	1874	Rochester	
Britts, David A. S.	R	1875	Marion	Marion
Palmer, C. M.	H	1875	Rochester	
Stoddard, Edwin Dexter	R	1875	High Forest	High Forest
Brorby, Mrs. J.		1876	Rochester	
Cressy, Frank J.	R	1876	Rochester	
Davis, Eugene C.	R	1876	Viola	Viola
Koontz, Sarah (Mrs. F.)	Mag.	1876?	farm	Oronoco
Orcutt, Isaac Hall	R	1876	Byron	Kalmar
Wood, L. N.		1876	Rochester	
Willson, W. H.	H	1876	Byron	Kalmar
Mosse, Frederick Richard	H	1877	Rochester	
Putnam, Marion		1877?	Oronoco	Oronoco
Bishop, Seth S.	R	1878	Rochester	
Fosgate, Daniel O.		1878?	Rochester	
Hill, Alonzo Ward	R	1878	Pleasant Grove	Pleasant Grove
Holterman, M.		1878	Rock Dell	Rock Dell
Johnston, Charles H.		1878	Rochester	
Netter, William	R	1878	Rochester	

Name	School[1]	Year of Arrival	First Place of Residence	Township
Bowers, Jacob Eton	R	1879	Rochester (St. Hosp.)	
Conan, W. J.		1879	Rochester	
Doms, William		1879	Rochester	
Evans, Ziba H.	R	1879	Rochester	
Hall, Levi[3]	H	1879	High Forest	High Forest
Sedgwick, Edgar T.	E	1879	Rochester	
Seifert, Charles G.		1879	Rochester	
Thoen, ———		1879	Rochester	
Boardman, Hamilton Philo	R	1880	Oronoco	Oronoco
Dodd, William M.	R	1880	Byron	Kalmar
Holmes, Edward Augustus	R	1880	Oronoco	Oronoco
Vilas, W. N.	R	1880	Rochester	
Vincent, William Alonzo[4]	R	1880	Rochester (St. Hosp.)	
Whitney, Mrs. Mary Jackson		1880	Rochester	
Clark, John Seymour	R	1881	Rochester	
Clarke, Ida	R	1881	Rochester	
Gustine, G. A.		1881	Rochester	
Horton, Joel H.	E	1881	Rochester	
Munger, Leland H.	R	1881	Eyota	Eyota
Roberts, D. R. (D. H.?)	H	1881	Eyota	Eyota
Keyes, Carlos (Charles) R.	R	1882	Byron	Byron
Lane, Nathaniel S.	R	1882	Eyota	Eyota
Skaro, Joseph George	R	1882	Rock Dell	Rock Dell
Wheat, John N.	H	1882	Rochester	
Bear, Hiram C.	H	1883	Dover	Dover
Cochrane, Alexander Brodie	R	1883	Rochester (St. Hosp.)	
Kelly, Patrick Nicholas	R	1883	Rochester	
Mayo, William James	R	1883	Rochester	
Barnum, E. E.	R	1884	Eyota	Eyota
Collins, Homer	R	1884	Rochester (St. Hosp.)	
Lang, H. H.		1884?	Byron	Kalmar
Struthers, Robert B.	R	1884	Rochester	
Adams, Arthur Strong	R	1885	Rochester	
Phelps, Robert McEwen	R	1885	Rochester (St. Hosp.)	
Witherstine, Horace H.	R	1886	Rochester	
Baker, Amos L.	R	1887	Dover	Dover
Mayo, Charles Horace	R	1888	Rochester	
Scoboria, Charles Q.	R	1888	Oronoco	Oronoco
Baker, Nathan Morton	R	1889	Rochester (St. Hosp.)	
Faulkner, Lloyd Anson	E	1889	Rochester (St. Hosp.)	
Kilbourne, Arthur Foote	R	1889	Rochester (St. Hosp.)	
Linton, Sara V.[5]	R	1889	Rochester (St. Hosp.)	
Randall, Henry Raymond	R	1889	Rochester (St. Hosp.)	
Dugan, Rollo Carlton	R	1890	Dover	Dover
Franchere, Frederick Edouard	R	1890	Rochester (St. Hosp.)	
Johnson, Frank M.	R	1890	Byron	Kalmar
Warninger, J.	German	1891	Rochester	
Giere, Eric Alonzo	R	1892	Rochester (St. Hosp.)	
Granger, Charles Topliff	H	1892	Rochester	
Moore, George W.	R	1892	Rochester (St. Hosp.)	
Robertson, ———	R	1892	Pleasant Grove	Pleasant Grove
Withrow, H. H.	R	1892	Rochester (St. Hosp.)	
Eby, Cyrus Bowers	R	1893	Rochester (St. Hosp.)	
Farrand, Corydon Butler	R	1893	Oronoco	Oronoco
Fawcett, Charles Edward	R	1893	Stewartville	High Forest
Herzog, H. H.	R	1893	Rochester (St. Hosp.)	
Jackman, ———		1893	Rochester (St. Hosp.)	
Stewart, C. K.		1893?	Byron	Kalmar

[3]The Rev. Levi Hall, a Methodist minister, in 1879 an undergraduate medical student, was then listed as a physician in a business and professional directory; he took his medical degree in 1882.

[4]William Alonzo Vincent, an undergraduate medical student, was employed at the State Hospital in 1880; on graduation in March, 1881, he became assistant physician.

[5]In 1892 Dr. Linton was married to Dr. Robert McEwen Phelps, of Rochester.

Name	School[1]	Year of Arrival	First Place of Residence	Township
Graham, Christopher	R	1894	Rochester	
Bascomb, Marshall Thomas	R	1895	Pleasant Grove	Pleasant Grove
Bassett, Mary Elizabeth	R	1895	Rochester (St. Hosp.)	
Cross, John Grosvenor	R	1895	Rochester	
Millet, Melvin C.	R	1895	Dover	Dover
Burns, Francis Walter	R	1896	Rochester	
Treat, Veader G.	R	1896	Oronoco	Oronoco
Bebb, Rose Anne	R	1897	Rochester (St. Hosp.)	
Booker, Gertrude[6]	R	1897	Dover	Dover
Button, Arthur J.	R	1897	Genoa	New Haven
Evens, Leo Ervin	R	1897	Rochester	
Knudson, Axel N.		1897	Rochester	
Plummer, Henry Stanley[7]	R	1897	Rochester	
Clay, Edward M.	R	1898	Oronoco	Oronoco
Voak, J. E.	H	1898	Rochester	
Broderick, William P.	R	1899	Rochester (St. Hosp.)	
Chapple, Charles L.	R	1899	Rochester (St. Hosp.)	
Heyerdale, Oscar C.	R	1899	Rochester (St. Hosp.)	
Meredith, Simeon Paul	H	1899	Pleasant Grove	Pleasant Grove
Russell, Herman Richard	R	1899	Stewartville	High Forest
Strickler, Abraham Franklin	R	1899	Rochester (St. Hosp.)	
Wanous, Ernest Z.	R	1899	Rochester (St. Hosp.)	

[6]In 1900 Dr. Booker was married to Mr. George W. Granger, of Rochester.

[7]Henry S. Plummer spent vacations from medical school studying at St. Mary's Hospital, Rochester; after graduation as a physician, in 1898, although resident in Mower County, he practiced widely in Olmsted County. He settled in Rochester in January, 1901.

Certain groups of practitioners, other than those listed in the roster, merit comment.

Arrivals at the Turn of the Century.—There commonly have been linked erroneously with the period considered in this paper the names of certain physicians who entered practice in Olmsted County soon after the turn of the century. A few are named here who became well known in the region. In 1900 Dr. Isabella C. Herb joined the staff of the Drs. Mayo as a pathologist and anesthetist; she remained in Rochester about five years. In 1901 Dr. Hugo Speier, an experienced physician, began his practice of several years in Rochester. In that year also, newly graduated Dr. Axcel C. Baker and Dr. Walter V. Gulick, both residents of the county, began their initial practice in Oronoco; Dr. Baker succeeded Dr. E. M. Clay and, on moving soon to Chicago, was succeeded by Dr. Gulick, who later was in Rochester. In 1901 Dr. Henry S. Plummer, of Racine, Mower County, as already noted, joined the Drs. Mayo in Rochester. In 1902 Dr. E. Starr Judd, of Rochester, returned home with his degree of doctor of medicine to begin his notable career as an associate of the Mayos by serving as an intern at St. Mary's Hospital. In the same year Dr. John E. Crewe (1872-1947) came from Zumbrota, Goodhue County, to enter partnership with Dr. J. G. Cross in Rochester. For many years an internist in private practice, Dr. Crewe also long served Olmsted County as coroner; he resigned in 1946, after nearly thirty-five years in the office.

Physicians of Neighboring Counties Well Known in Olmsted County.—In the course of widespread intercounty practice in southeastern Minnesota and in the development of regional organization of medicine, many practitioners of Olmsted County and of the neighboring counties became well known to one another, so that there were calls back and forth among them for professional consultation. Occasionally, when a physician was away on a clinical trip, one of his confreres

from his own community or elsewhere would carry on his practice for him; for example, in 1891, when Drs. W. J. Mayo and C. H. Mayo were attending a medical meeting together at Saint Paul, one of the rare times when they were both absent from home, Dr. S. H. Van Cleve, of Mantorville, and Dr. W. A. Chamberlain, of St. Charles, served at Rochester for them.

Some of the first physicians to attend settlers of Olmsted County were R. W. Twitchell and A. H. Trow, who settled in Chatfield, Fillmore County, in 1854 and 1856, respectively, and who were summoned into Elmira and Orion Townships of Olmsted County and as far west as Pleasant Grove. Since Chatfield lies partly in Olmsted County, all the physicians of that village practiced widely in the northern county; some of them had their homes within its border. A roughly chronological list of the physicians of Chatfield from 1854 to 1900 includes the names of R. W. Twitchell, Nelson A. Allen, A. H. Trow, Isaac S. Cole, D. N. Morse, Morrison, W. F. Coleman, Masse, William Haslam, H. Thomas, E. H. Grannis, John C. Dickson, Jesse C. Fate, Isaac W. Timmons, Aaron M. Stephens, Milton A. Trow, Florence J. Halloran, Charles McH. Cooper, George E. Jackson and Alexander MacDonald.

From near-by counties other than Fillmore come well-known names, of which a few are given here: In the earliest years there were Dr. F. C. Gibbs, of Plainview, who died in 1864, and Dr. J. R. Dartt, of Mantorville, who died in 1874. Of the early period also, but of long life, were others: Dr. W. T. Adams, of Elgin, son-in-law of Dr. Gibbs, for many years was the chief physician in Viola Township, Olmsted County, and for some time kept regular office hours at the general store in Viola; in 1876 young Dr. Eugene C. Davis, of Viola, a native of the county, joined Dr. Adams in practice at Elgin. There were Dr. Charles Hill, of Pine Island, and, of a later period, Dr. W. L. Craddock of that place; Dr. F. H. Milligan, of Wabasha; Dr. Nathaniel S. Tefft and Dr. J. P. Waste, of Plainview; Dr. H. H. Guthrie, of St. Charles, and the later Dr. W. A. Chamberlain, of that place; Dr. Franklin Staples and Dr. J. B. McGaughey, of Winona, and Dr. S. B. Sheardown, of Stockton, and his son, Dr. T. W. Sheardown, of Winona. Some of these men and others from outside the county became members of the Olmsted County Medical Society and in 1892 were among the founders of the Southern Minnesota Medical Association.

Olmsted County Boys Who Became Physicians Elsewhere.—There was a large group made up of men who were natives of Olmsted County or who came to the county as boys, who qualified as practitioners of medicine prior to 1900 but who either did not follow their profession in their home county or did not do so until after 1900. All had ability, it is said, and some became well known. From a long list the following names are taken: George B. Ayres, S. H. Baker, Sylvester L. Bedal, George E. Campbell, Sheridan G. Cobb, Paul B. Cook, Francis Feeney, Joseph A. Gates, Royal A. Gove, Milan J. Hart, J. A. Heilscher, Seth E. Howard, L. F. Hoyt, Fred. Hyslop, E. E. McPeek, James McPeek, P. H. Manion and John S. Manion, Henry Miner, Alton Moulton, Joseph F. Percy, Eustis Singleton, G. A. Stevenson, R. R. Stevenson and T. Y. Stevenson, John T. Smith, Job J. Thompson and Francis R. Woodard. Other names that perhaps might be included have been omitted because of uncertainty as to residence or training of the practitioners; in the eighties and nineties the regional newspapers had the habit, which has been a source of confusion in research in the nineteen forties, of referring to undergraduate medical students as "doctors."

General histories of the development of communities usually discuss physicians in their civic capacities rather than in their professional roles. As a rule physi-

cians were better educated than their fellow citizens, and in addition to their professional work they consequently were called on to accept civic responsibility, which in the growth of settlements overshadowed their work as physicians. When a practitioner gained the confidence of the people as a physician, however, he became a minor oracle and his decisions usually were unchallenged. Although some young men became physicians because their physical health was not equal to the strenuous pursuits of farming, milling, carpentering, and the like, more of them entered upon the study of medicine because of the honored position physicians held in their localities and especially because of the personal esteem the students had felt since boyhood for certain physicians.

Many of the men named here, as well as others who are mentioned elsewhere in this article as physicians of Olmsted County, received their first medical instruction from able local physicians and surgeons. It was expected, in the day of study under preceptors, that when a young man had acquired sufficient experience to warrant his practicing independently, he would move on to another community; as conditions of medical education changed, the student would leave his preceptor, after a period of from one year to three years, to take a degree at a medical school. It is remembered to the credit of most of the preceptors that they were kind and wise instructors to students and that they were generous colleagues to young physicians just entering practice.

Druggists.—In the early years there were certain druggists of the county to whom the public gave the title of doctor. It should be said that many qualified practicing physicians of Rochester of that period operated drugstores, usually in partnership with druggists, and compounded their own medicines, and that nearly every physician in the outlying villages of the county either operated a drugstore or kept on hand a supply of medicaments so comprehensive as almost to constitute a drugstore.

The professional druggists of Olmsted County, from the time of J. S. Woodard, the pioneer druggist of Rochester in 1858 or earlier, form a long list. Among the best known personal or firm names are those of Franklin Van Dooser, J. D. Ameigh, John Clark (who in 1861 offered from six cents to ten cents a bushel for ashes, to make soap), H. B. Upman, J. Charles, O. W. Anderson, A. F. Childs, E. C. Richards, J. E. Ells, Gustavus Hargesheimer and Brothers (later the sons of G. Hargesheimer were druggists), F. A. Pool, J. D. Blood, Pierce Brothers, Samuel Geisinger, Angelo Newton, George Weber and P. G. Heintz. Many of the druggists served as preceptors to local youths who were interested in learning pharmacy. Among these druggists, most of whom were in Rochester, there were partnerships of varying terms, of which a few were: Woodard and Ells, Anderson and Childs, Ells and Hargesheimer, Pool and Harrington, Pool and Geisinger, Geisinger and Newton, and Weber and Heintz. In Rochester, in 1947, the names of Weber and Hargesheimer still were associated with the drug business.

On August 16, 1871, the editor of the *Central Record* of Rochester said: "We suggest that arrangements be made whereby some of the drugstores be open on Sunday so that people can get medicines on the Sabbath." In the next issue of the paper it was announced that each of the following stores, in the order named, would be open one Sunday a month: Upman, Hargesheimer, Pool and Geisinger, and Anderson.

Dentists.—Although most physicians and surgeons in the early decades of medical practice in the county were necessarily dentists on occasion, Olmsted County, even in that era of traveling dentists, had a resident dentist, Dr. J. M.

Williams, who came to Rochester in 1856 and who in the forty-two years of his practice there accepted advances in his profession and served the community well. One of his announcements, in 1865, illustrated by a picture of teeth, was: "Persons from a distance desiring false teeth will not be detained more than one or two days, and when so detained will be allowed $1 a day for board. My prices will always be as low as any dental physician in southern Minnesota." In 1868 Dr. Williams was using nitrogen monoxide ("laughing gas"), in which practice he was endorsed by the leading physicians and surgeons of the city, Drs. R. M. Reynolds, W. W. Mayo, Hector Galloway, E. C. Cross and E. W. Cross. An able preceptor, he was the first professional instructor of Archibald Bamber, who had come to the community as a child. Dr. Bamber from 1867 for many years was a leading dentist of Rochester and was also a preceptor in dentistry. There is included here, to illustrate a custom of the times, a notice that was published by Dr. Bamber in 1871. This little statement has been taken from among many notices of the sort that appeared in that period, from physicians, dentists, lawyers, editors and others. Dr. Bamber said: "I am now in want of a couple of good cows and will at any time take in payment for dentistry, farm produce. I will at the present time take wheat at $1 a bushel." Another student under Dr. Williams was Dr. J. H. Spaulding, son-in-law of Dr. Galloway, who ultimately had a distinguished career in dentistry in Paris, France.

In 1864 a Dr. Welch, of Rochester, wrote a series of short articles, "Points on Dentistry," which were published in the city papers. In the seventies Oronoco received Dr. Chamberlain, who died there in 1879. In that decade Rochester received Dr. F. L. Beecher, who practiced in the city until his death in 1906, Dr. B. F. Allen, brother of Dr. W. A. Allen, Dr. E. D. Allison, and Dr. E. Pentecost. In 1889 Dr. W. S. Aldrich settled in Rochester, and in 1895 Dr. Erwin Sinclair, a graduate dentist of that year, whose boyhood home had been Byron, joined him in partnership. In the nineties also Dr. T. P. Haggerty, sometime of Eyota, was in Stewartville, and Dr. A. B. Clark was in Eyota. Dr. C. A. Couplin came to Rochester in 1898 and Dr. H. J. Smith in 1899. Dr. Smith in the previous year had done dental work among the patients at the state hospital at Rochester.

Information has come regarding a lay citizen who served his community as a dentist and as an aid to physicians in the practice of medicine, John H. P. Fawcett, father of the late C. E. Fawcett, M.D., (*q.v.*), of Stewartville, and A. C. Fawcett, D.D.S., of Rochester. Mr. Fawcett came to Olmsted County in 1858 as a farmer and to the village of Marion in 1866 as a merchant. At the back of his general store he had a small room in which on certain days of each week, at one period, Dr. Kelly of Rochester, it has been said, kept office hours. There one day when the doctor had difficulty in removing a tooth for a patient, he called on Mr. Fawcett for help. The merchant made the extraction with dexterity and complete success. From that time he studied dentistry and, with the approval of physicians, acted as dentist for his neighborhood. At first he had only a dental forceps (still in use, in 1947, by his son and his grandson, dentists in Rochester) that a local man had brought from service, perhaps from a military hospital, during the Civil War, but he soon acquired a full professional set of instruments. He was also a student of Gunn's book on medicine, and at the request of certain physicians of Rochester, among them the Drs. Cross and Dr. Mosse, the story runs, who often were called to the community, Mr. Fawcett acted as a sort of auxiliary practitioner. In each case, between visits of the physician, he performed indicated offices, such as administering medicines, taking temperatures, and changing bandages, and reported progress of the patient to the physician. On at least one occasion he gave first aid. Happening to be at hand

when a local woman received a broken wrist in falling from a cart during a runaway, Mr. Fawcett improvised a splint with strips of wood that he pried from a fence post near the road and with strips of cloth that he tore from the apron of a woman who lived near the scene of the accident, and took the patient to Rochester for more expert attention.

Opticians.—For many years in the period under consideration there were only two licensed opticians resident in Olmsted County, it is believed. Both were highly respected citizens. John B. Blickle, a native of Germany, who was born in 1850, received training as a watchmaker and jeweler in his native country and in Switzerland. In 1879 he settled in Rochester, Minnesota. For a time he worked with Eleazer Damon, pioneer jeweler in the city, before opening his own business; from 1886 until 1909, the year of his death, he was an able optician as well as a jeweler. One of his sons, Henry Blickle, of Rochester, followed his father in business as jeweler and optician. Dr. Joseph W. Grainger was a native of England, born in 1838, who before coming to Rochester in 1883 had been a watchmaker and jeweler as well as an optician. In Rochester he was a practicing optician. A skilled member of his profession, he was president of the Southern Minnesota Optical Association for two terms, and of the Northwestern Optical Association for four terms. In 1901 he was appointed by Governor Van Sant, of Minnesota, as a member of the board of examiners in optometry and in due time was reappointed for a second term of three years.

Osteopaths.—Osteopathy did not come to Olmsted County until the late nineties, when Dr. Anna B. Collins arrived in Rochester in the autumn of 1897. She moved to Milwaukee early in 1898. Dr. and Mrs. W. A. Fletcher and Dr. John A. Waddell, all practitioners of osteopathy, arrived in Rochester in the spring of 1898; after a few weeks they removed to Cantril, Iowa. Dr. and Mrs. S. A. Thompson came to Rochester from Minneapolis in August, 1898, but did not stay long.

Miscellaneous "Doctors."—There were sundry persons resident in Olmsted County at various times from the early years of settlement into the nineties who called themselves "doctor"; three of them, included in the foregoing roster, in due time received exemption certificates to practice in the state. The record is meager. Some of the number, it has been learned, were veterinarians. Others were herbalists whose practice was limited to their own neighborhoods; some of these herbalists were women who were also midwives. A few practitioners, so-called, were local peddlers who carried a stock of patent medicines in addition to other merchandise. One of this group bought and sold rags as his chief undertaking. There were certain others who compounded cure-all salves from mysterious prescriptions and peddled them.

(To be continued in the September issue.)

President's Letter

DOCTOR'S ORDERS—FOR DOCTORS, TOO!

The patient is tired—his fatigue manifesting itself in an almost tangible weariness of spirit. He admits to an uncertain schedule of eating and sleeping, a job that requires his attention at odd hours of the day and night and for unpredictable stretches of time. His nerves are taut with the strain of split-second decisions, the exacting and instantaneous discipline the brain exercises over his hands and eyes.

The doctor knows that what this patient needs is a long vacation, away from any reminder of his profession, and minus a schedule that is all the more strenuous because it is a varying one. He knows, too, that this patient, when he returns, should develop some hobbies, get interested in sports that will take him out of doors.

But will the doctor follow doctor's orders?

He will if he takes the long look, past the momentary appearance of selfishness in his absenting himself from patients who need him, and realizes that if he is to maintain optimum efficiency and skill over the longest span of years, he must follow the health rules that he prescribes for others. He must keep in mind that his value to his patients is cumulative; with every passing year, as he prescribes the medicines and performs the operations that save life and health, his patients come to depend on him more and more.

With this dependence comes faith in the doctor—as a friend and healer, and, often, as family counsellor. Through long years of association the doctor-patient relationship, an almost sacred tradition, since it deals with the basic principles of human well-being, is built up.

The medical profession has no right to deprive patients of this rewarding tradition. Doctors owe it to their patients, as well as to themselves, to conserve their health and lengthen their life expectancy.

That doctors do not care for themselves properly is evidenced by the fact that doctors do not live as long as their fellow citizens. Heart disease is the greatest death-cause among physicians. States Frank G. Dickinson, Ph.D., director of the AMA Bureau of Medical Economic Research: "Heart disease is in reality an occupational hazard of the medical profession."



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

THE HOOVER COMMISSION REPORT

THE EFFORTS of recent Presidents of our country to effect reorganizations in the Federal Government have come to naught due to congressional terpitude. The establishment of the Hoover Commission, however, was initiated by and unanimously approved by Congress.

A twelve-man Commission was set up in 1947 and the services of some 300 outstanding citizens were obtained gratuitously to serve on the so-called task forces to study and report their recommendations for reorganization.

The Task Force on Federal Medical Services was composed for the most part of outstanding physicians under the chairmanship of Tracy S. Voorhees. Its report, which appeared in January, 1949, brings out the lack of co-ordination and gross extravagance of Federal medical activities and the need for radical reorganization.

Four large and forty smaller federal agencies spent $1,250,000,000 for health and medical services in 1948. This amount was five times that spent in 1940 and 20 per cent more than in 1947. The Veterans Administration alone plans to spend in 1949 as much as all forty-six agencies spent in 1948—half of it for new hospitals. The United States now gives some medical care to 24,000,000 beneficiaries, 18,500,000 of whom are veterans.

The Veterans Administration has adopted a building program to increase the existing hospital bed capacity by a third and eventually to 300,000 by 1980. While it is estimated on good authority that by 1975 some 250,000 will be required for service-connected cases and chronic non-service cases—the latter being almost all medically indigent—the fact is that the Veterans Administration is at present unable to staff the beds now available. The question is brought up whether this enormous building program will not interfere seriously with the operation of the new hospitals being built all over the country as a result of the Hill-Burton Bill. Will these latter hospitals and private hospitals be able to obtain the needed personnel?

The hospital building program of the Veterans Administration envisions $1,100,000,000, and the Armed Forces desire an additional $200,000,000 for constructions. The large veterans hospitals cost taxpayers $20,000 per bed, the smaller ones $30,000 and some even $51,000 per bed. Why?

The report brings out specific examples of needless construction of hospitals by the Veterans Administration and the Army costing millions of dollars where existing Navy hospitals could well care for the needs.

The report also states that half of the eighty-nine new veterans hospitals are being built or planned in areas where they will be difficult to staff.

Some 900,000 dependents of the Army and Air Force are at present receiving complete medical care virtually free. This free care has been given on the basis of a sixty-year-old law entitling dependents to hospital care "whenever practicable." A similar situation exists in the matter of hospital care of veterans for non-service-connected disabilities. Veterans may be cared for in veterans hospitals if they declare themselves medically indigent and if beds are available. The Veterans Administration is evidently going to see that beds will be available. There is said to be little check on the statement that the veteran is medically indigent. We recently heard of a veteran who deposited $40,000 in government bonds on entering a veterans hospital and declared himself unable to afford hospital care. The status of these two groups should be clarified in the interest of overall planning.

The report recommends, in brief, the integration of the numerous governmental health activities into two major systems, military and non-military. The non-military federal health activities would constitute a Department of Health headed by a Cabinet member. The Task-Force was originally instructed to make its report on the basis that health activities would constitute a bureau in a department including Bureaus of Health, Education and Social Security. The Task

Force's original report in January, 1949, was made on that basis, but a supplemental report made in March, 1949, strongly recommended the establishment of a separate Department of Health with a Cabinet member who shall be a trained medical administrator. This change in their report would not alter materially their recommendations.

The Department of Health, then, would be made up of three main divisions: (1) Medical Care; (2) Public Health, and (3) Research and Training.

Under Medical Care would be included the Veterans Administration, Public Health Service, St. Elizabeth's Hospital and, rather paradoxically, the general hospitals of the Army. It is felt that most patients in the Army general hospitals are of little further military value and in the interest of better medical care and economy these hospitals should be operated with the non-military group. Recommendation is further made that those entitled to Federal medical services be cared for as often as possible in non-Federal hospitals on a reimbursible basis so that the veteran can remain near home and voluntary hospitals may receive much needed patronage.

Under the division of Public Health most of the Federal public health functions would be gathered with certain exceptions, such as preventative medicine functions of the armed forces, the Children's Bureau, the Office of Vocational Rehabilitation, meat inspection or other actvities of the Department of Agriculture. This division would administer grants-in-aid in public health to the states, conduct a clearing house of information on public health activities and would establish interstate standards for foods, drugs and sanitation. These grants-in-aid, instead of being made as now in twelve different categories by three Federal agencies, would be administered by the Public Health Division. They believe the Children's Bureau should operate as a staff unit directly responsible to the secretary of the department, and at a later date, within three years, the administration of the grants for maternal and child health aid for crippled children should be transferred to a special Grant Unit in the Public Health Division.

Research and training are included in one division. Research in military problems and in atomic energy are not included. Arrangement is made for an Interagency Committee to supervise contracts, grants-in-aid and institutional grants to non-Federal institutions. The Division of Research and Training would be responsible for planning the research program and allocating funds for research projects. It would operate the experimental work of the National Institute of Health and the authorized Clinical Research Center for the combined clinical and laboratory investigation of cancer, mental disease and cardiovascular disease. The research grants-in-aid program of the Public Health Service and of the Medical Research and Education Service of the Veterans Administration would also be transferred to this division. A fellowship program along the lines of that presently conducted by the Public Health Service, whatever aid to medical schools Congress might decide to give, administration of the Army Medical Library would all be functions of this division.

In regard to the question of aid to medical education, the report states there are seventy medical schools in the country, forty-three supported by private funds. A large number of the latter are in financial distress. Formerly, 70 per cent of the expense of operating a medical school was furnished by tuition fees. Now these fees supply only 25 per cent of this cost. The American Medical Association has estimated that an additional $700,000,000 is needed at once to supplant the endowment of private medical schols or $16,000,000 a year. Fellowships, too, are needed to stimulate the training of research personnel, public health officers and psychiatrists.

While the AMA has been opposed to Federal assistance to the medical schools, it would seem that of necessity the private medical schools will need assistance from a source outside private philanthropy in order to continue. Federal grants, if found necessary, should not interfere with autonomy of the schools.

The more one looks into the Task Force Report on Federal Medical Services, the more one realizes what a shake-up in the whole structure of our Federal government is proposed. The need for complete reorganization in the interest of efficiency and economy is evident. It is estimated that somewhere from three to five million dollars would be saved in the cost of the federal government yearly, and the number of Federal employes could be cut 10 per cent.

That there will be strong opposition from selfish interests is a foregone conclusion, and changes will have to be made piecemeal and over a period of time.

An aroused public opinion can do much to put the plan over. A unique organization composed of leading citizens and nonpartisan in character, including former Vice Presidents Dawes and Garner and five former members of Democratic and Republican Cabinets, has been formed to support the Commissions' recommendations.

The medical profession for years has advocated a U. S. Department of Health to be headed by a physician trained in medical administration to have Cabinet rank. We stand for the adoption of the recommendations of the Hoover Commission as far as the health activities of the government are concerned. We do not want these activities merely to constitute a Bureau in a Department including Education and Social Security but to be a Department in its own right.

CLINICS IN COLOR TELEVISION

RADIO may be compared—radio, television, color television. To the uninitiated all three inventions are beyond comprehension, but color television is the superlative.

The first use of color television on May 31, 1949, for surgical and medical clinics at the Hospital of the University of Pennsylvania sets a milestone which deserves some comment. Similar clinics were given in color television at the American Medical Association meeting in Atlantic City through closed circuit from the Atlantic City Hospital by staff members of the Medical School of the University of Pennsylvania and the Atlantic City Hospital and visiting surgeons. The advantage of this new method of presenting clinical material was convincingly demonstrated. Close-ups of surgical operations and skin lesions lend themselves particularly well to this new medium.

The demonstrations were sponsored by Smith, Kline and French Laboratories who own the equipment, and they plan to repeat them at future medical meetings. Co-operating with the laboratory firm and the University of Pennsylvania was the Engineering and Research Laboratories of the Columbia Broadcasting System under the direction of Dr. Peter Goldmark who designed and produced the color TV equipment for medical institutional use.

The camera can be so focused that the image on the receiving screen is several times larger than what the surgeon himself sees. While the camera is in use, the lens is approximately four and a half feet from the operating field. Thus, all viewers have the advantage of a close-up view of the operative field or the patient.

It is probable that before long color television will be standard teaching equipment in the larger medical schools. The day will then have arrived when television spectators will be able to see the operative site just as well or better than the one at the operator's side.

COMMUNITY CHESTS

IN THE FALL of each year the Community Chests of the country conduct local campaigns for funds for the various humanitarian activities which they support. There are now 1,250 Community Chests in the country—an increase of 200 during the past year. These include approximately 14,000 separate agencies.

Community Chests were originally established as an economy method in the support of worthwhile community eleemosynary activities. Voluntary solicitors make one visit on prospective donors instead of each agency making its own campaign. The citizen is approached by one instead of twenty or more solicitors. Only worthwhile agencies are included in the Chests, and duplication is avoided.

One may be inclined to wonder why the need for funds for benevolent organizations has not diminished. A consideration of the character of the activities of the member organizations, however, will indicate that there is as much need now as ever before and the need will be greater rather than less in the future for all the agencies in most Community Chests. The character of the activities of most of the agencies is that of prevention rather than relief, and the need for the various youth activities—the Boy and Girl Scouts, the community centers, the USO, the YMCA and YWCA, Child Guidance Centers and Day Nurseries—in view of the great amount of present-day juvenile delinquency is greater than ever.

Voluntary support of local activities which make for better communities is one of the hearten-

ing evidences of the existence of a feeling of responsibility for their fellow men in the hearts of the American people. May Community Chests continue to grow in number and breadth of activity!

COURSE IN PRACTICAL NURSING

The University of Minnesota is initiating a course in Home Management and Practical Nursing to be offered jointly by the School of Agriculture and the School of Nursing at the University. The first course will begin October 3, 1949 and will consist of six terms or eighteen months in all.

Students will register in the School of Agriculture on the Saint Paul campus this fall. Training will be obtained on the campus in Saint Paul and also in Minneapolis. Work will be assigned also in the University Hospitals and during next summer in rural hospitals. Students will be able during their course to take advantage of extra-curricular activities in the form of music, dramatics and athletics. Living cost will be approximately $150 a term.

Upon completion of the course, graduates will receive a diploma and will be eligible to take the State Board Examination for Practical Nurses.

There is a great demand for practical nurses at present, both in cities and rural communities, to care for the sick at home and in the hospitals, to assist registered nurses in hospitals and to work in rural community organizations. The training given these young women in home management, including cooking and sewing as well as caring for the sick, provides a valuable background for general living.

Application blanks may be obtained from the office of J. O. Christianson, Superintendent, School of Agriculture, University Farm, Saint Paul 1, Minnesota.

DOCTORS AND PUBLICITY

Employment by the American Medical Association of a public relations firm to present the doctors' opinions on the state medicine issue to the country is drawing criticisms from quarters which favor President Truman's proposal for compulsory Federal health insurance.

One self-righteous expression which comes to our attention says that if "so vital an issue of health insurance can be decided by the special, ingenious and concealed pressures of a firm of professional publicists, then democracy has been perverted."

For our part, we can't get excited about the alleged perversion of democracy by a professional group which is doing no more than using the government's own methods to oppose attempts to force it into a socialistic strait-jacket and to foist an expensive, inefficient and unnecessary system of bureaucratic medicine on the country.

The Federal government has more publicists on its payroll than all the private public relations firms in the country combined. Every department, agency, bureau, branch and other subdivision, whatever its name, has its staff of publicity workers zealously seeking to protect its interests and put the best possible construction on its activities. It is safe to say that hundreds—perhaps more—of the Federal press agents are currently devoting their time to belittling and disparaging the American medical profession and trying to sell the public the idea that for a few dollars a year in additional payroll taxes, all medical and dental care, surgery, hospitalization, eyeglasses, teeth, hearing aids, wigs, etc., will be "free" just as they are in Great Britain under the beneficient aegis of socialized medicine. They don't mention that England's payroll taxes only finance one-tenth of the program and that the income tax rate is 40 per cent up.

What's wrong about the doctors hiring publicity experts to tell the public their side of the story?

As for "ingenious" and "concealed" pressures, nothing could be more specious or devious than some of the pro-state medicine propaganda constantly being poured out on the public. Figures are twisted and juggled. Misleading statistics, such as those relating to armed forces rejections for physical reasons are cited as "proof." American public health, demonstrably at the highest level to be found anywhere in the world, is pictured as appallingly bad because it isn't better than some reformer's idealistic slide rule says it ought to be.

Isn't that "perverting democracy," too? Or are government press agents in a sacrosanct class by themselves?

We don't blame the doctors for fighting back. They are not publicity experts. They are, predominantly, professional men, trained to heal and relieve human suffering, not to engage in a duel of wits with the Federal government's double-talking propagandists.

They have a case and a convincing one for continuance of private medicine in the United States. It is to be hoped that they may use every legitimate means to present it to the public in the ablest possible manner. —From Jackson (Mississippi) *Daily News.*

A GOOD INSECTICIDE, NOT POISON

A statement was recently issued by the Department of Agriculture and the Federal Security Agency calling attention to the proved value of DDT as an insecticide. Some public alarm has been caused by misleading comments concerning possible hazards connected with the use of this chemical. It is pointed out that DDT has contributed materially to the welfare of the world, and should not be brought into disrepute through overemphasis of the well recognized fact that it has toxic properties, especially if improperly used. The ingestion of a tube of toothpaste, or a cake of soap or a bottle of cleaning fluid might be injurious or fatal, and yet they are harmless and useful substances if properly employed.

The fact that DDT, like other insecticides, is a poison, has been given full consideration in the formulation of recommendations for its use: "There is no evidence that the use of DDT in accordance with the recommendations of the various Federal agencies has ever caused human

(Continued on Page 842)

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

BYRNES SCORES DRIFT TO STATISM

One of the most incisive analyses of the current, ominous trend of the American people toward complete dependence on the government was given by James F. Byrnes at Washington and Lee University, June 18.

Mr. Byrnes, former member of the House of Representatives from South Carolina, has served as U. S. senator, war mobilizer, justice of the U. S. supreme court and secretary of state. In presenting the speech for insertion in the Congressional Record, Senator Robertson described Mr. Byrnes as ". . . drawing upon a background of experience in public affairs equaled by few and surpassed by none of our day and generation and speaking with a frankness and candor permitted to one who is now a detached observer of political trends."

Said Mr. Byrnes:

"We do well to give thought to the men and women who settled this country. They came here to avoid the tyrannies of monarchies and enjoy the blessings of liberty. They were practical idealists. They kept their eyes on the stars but kept their feet on the ground. For a century and a half their sterling qualities were emulated by the American people. But today their philosophy of life and their views of government seem forgotten or ignored.

Toward Economic Slavery

"Every segment of society is demanding special privileges—the farmer wants higher prices, the wage-earner wants increased wages, pensions, and hospitalization. Too many people want more pay for less work. We are going down the road to stateism. Where we will wind up, no one can tell, but if some of the new programs seriously proposed should be adopted, there is danger that the individual—whether farmer, worker, manufacturer, lawyer, or *doctor—will soon be an economic slave pulling an oar in the galley of the state.*

"Unfortunately each political party tries to outpromise the other. Some people even go so far as to say that it is unsocial to save. They want to lean upon the state, yet the state has to lean upon each one of us.

"Too many people are trying to transfer power to government. That is justified in war but not in peace. In time of peace the state must exist for the individual and not the individual for the state. Power once transferred to government is difficult to recover. Power intoxicates men. When a man is intoxicated by alcohol he can recover, but when intoxicated by power he seldom recovers.

"We are not only transferring too much power from the individual to government but we are transferring too many powers of State governments to the Federal Government.

"We should not have the Federal Government regimenting our lives from the cradle to the grave.

Alias Public Welfare

"Some of the proposals now suggested which would curtail the liberties of the people are offered in the name of public welfare and are to be made possible by Federal aid. That phrase is an opiate. It is deceptive. It leads people to believe that Federal funds come from a Christmas tree. The truth is there are no Federal aid funds except those taken from your pockets. If the people generally will ever come to understand this, there will be less demand for Federal aid.

"Beware of the Greeks bearing gifts. Beware of those who promise you something which does not belong to them and which can be given to you only at your own expense or the expense of another who may not produce to make the promise good.

"Give States a Chance"

"The States may have failed to make adequate expenditures in some fields. That does not justify the transfer to the Federal Government of powers it was never intended to exercise. In every State there has been increased expenditures for welfare purposes. Give the States a chance.

"If the Congress, instead of seeking new ways to spend the money which is being collected from the people, would repeal some of the excise taxes, the States could then levy additional taxes in that field. They could provide for many worthy causes and still leave the people with more money and more liberty.

"In the days ahead of us, there will be a struggle between those who believe in individual freedom and those who would subordinate the individual to the dictates of the government. There will be a struggle, too, between those who would transfer even greater powers to the Federal Government and those who would stand by the Constitution in its reservation of powers to the States."

GOVERNMENT GETS THIRD DAY'S PAY

Every third day the people of this country work for the government—that is, federal, state and local governments combined take one-third of everything Americans produce.

Pointing out how government control engenders more government control, Ralph W. Gwinn, New York Representative, told the House of Representatives:

"Many enlightened scholars have expressed doubt as to whether any government can take more than two days in ten from the people, or 20 per cent of the nation's income, and still leave a people able to take care of themselves. Above that level, Socialist management becomes inevitable. We must remember that as recently as 1930, London and Paris managed only 21 per cent of their national economy; Berlin managed 22 per cent and brought on national socialism three years later, Moscow, after thirteen years of socialism, managed only 29 per cent of the Russian economy. Can we be excused, if we fail to take to heart these facts and govern ourselves accordingly?"

Mr. Gwinn, in strengthening his contention that the government has become over-powerful and unwieldy, said:

"With a forty-hour work-week, we have less than twenty-seven hours, or about three and one-third days per week to produce our food, clothing, and shelter, and to maintain our health and education. It cannot be done. So, as a consequence, the people cry out in increasing millions for the Government to do for them what they are incapable of doing for themselves in three and one-third days per work week. The only cure that Government proposes is that of extending Government management, increasing taxes, and thus reducing even further the number of days in which the people can work for themselves in the management of themselves, their property and their happiness. Such methods can only lead to scarcity and general poverty, as in Russia."

Socialized Medicine a Bribe

Asserting that U. S. Government is well on the way toward socialism, Representative Gwinn called attention to another signpost on the road:

"Our socialists propose to continue . . . to Marxist serfdom by bribing our doctors to socialize health and medicine from Washington just as the British Marxist Government has done. The procedures are almost identical. Seven hundred and fifty thousand doctors, nurses, and hospital personnel would enter our Government employment and cease the free practice of medicine. Washington would guide and control it all, drying up the voluntary source of skill, mercy, health, and hospitalization. Multiply 750,000 by four and you get another group who will vote according to the promises of appropriations for their particular benefit. The less fit will grab $8,000 a year in Government salary just as they grabbed 2,000 pounds a year in England.

"There will be no more need to excel in skill and devotion to patients; there will be no more competitive effort for public favor. Payments by Government will be for quantity, not quality, of service. . . . Government medicine is sterile. It never invents or discovers new cures. It can but appropriate and try to take by force what the individual alone can give as a voluntary free servant of the people. He alone can have the heart of sacrifice and devotion and love of service. Without freedom in medicine, the art of healing itself disappears."

CHRONIC ILLS PART OF HOSPITAL PLAN

Care of the chronically ill comes in for serious consideration in the 1949 revision of the *Minnesota Plan for Hospitals and Public Health Centers,* just released by the State Department of Health.

The publication, which outlines an over-all hospital construction plan for the state on the basis of the hospital Survey and Construction Law, calls for two chronic disease hospital beds per thousand of population—a total of 5,776 for Minnesota.

The Department is considering chronic disease patients apart from tuberculosis patients, mental patients and individuals requiring only nursing or domiciliary care. A chronic disease hospital is defined as having "the primary purpose of providing medical treatment for the cure or rehabilitation of chronic conditions including the degenerative diseases."

According to the plan, the hospitals are to be located as near to the patients as possible without overlooking the "urgent desirability" of constructing the units in conjunction with general hospitals where diagnostic and treatment facilities are available. The formula being used would allocate chronic disease beds to sixty-seven hospitals in thirty-seven locations, which were selected with regard to population density and distance patients would have to travel to medical centers.

CIO EXECUTIVE LAUDS BLUE CROSS PLAN

Harry Becker, director of the International UAW-CIO's social security department, has been quoted as saying:

"Blue Cross can offer Labor a more favorable program than is otherwise available in America today for the following reasons: Blue Cross can contract with all hospitals in a given geographical area on an actual cost of care basis; Blue Cross has a tax advantage which reduces premium costs; Blue Cross has non-profit status; Blue Cross can keep operating expenses within 10 per cent or less of income; and Blue Cross, as a community agency, is tending in the direction of effective, non-professional public representation on governing boards of trustees."

MINNESOTA STATE MEDICAL ASSOCIATION

House of Delegates

Summary of Proceedings*

Saint Paul Session—May 9-11, 1949

First Meeting, Sunday, May 8, 1949

The Terrace, Hotel Lowry
Saint Paul, Minnesota

The Ninety-sixth Annual Session of the House of Delegates of the Minnesota State Medical Association was held in the Terrace, Hotel Lowry, Saint Paul, Minnesota, beginning at 2:15 p.m., Dr. C. G. Sheppard, Hutchinson, Speaker, presiding.

Dr. Sheppard called the meeting to order and asked for the report of the Credentials Committee. Dr. Rolf Hovde, Winthrop, reported that a quorum was present. After approval of the minutes of the 1948 session of the House, Dr. Sheppard introduced two guests, Mr. C. H. Crownhart, executive secretary of the Wisconsin State Medical Association, and one of his staff members, Earl Thayer, executive director of public relations. Mr. Crownhart spoke briefly, opining that "physicians, as citizens, have interests in any type of legislation that affect the public welfare" adding that "these are momentous times, and I hope your statesmanship in your sessions today and tomorrow will be guided by the best judgment that you men can exercise in the interest of the health of the people of Minnesota and of the nation as a whole."

Dr. Sheppard next called for the report of Dr. F. J. Elias, chairman of the Council.

Report of the Council

Dr. Elias: The first meeting of the Council in connection with the Ninety-sixth Annual Meeting of the Minnesota State Medical Association was held on Saturday, May 7, 1949, at 2 p.m. in the Hotel Saint Paul, for transacting routine business. Minutes of the previous meetings were approved and financial reports were submitted and accepted. Supplementing the report of the Finance Committee . . . your Council chairman desires to call your attention briefly at this time to the sound financial position of your State Association. Shannon and Byers, auditors, reported on April 7, 1949, after examining the records of the accounts of the Association, that they were accurate, and that the increase in the total net worth in 1948 amounted to $1,165.37 over the previous year.

. . . the Council approved a resolution to contribute $100 for 1949 toward the extensive education program carried on by the National Society for Medical Research to eliminate impediments to research.

Discussion (of nurse recruitment) centered around the following facts:

1. The Minnesota State Medical Association has, by authorization of the Council and the House of Delegates, lent its full support to nurse recruitment efforts in the past.

2. Physicians who have worked closely with organizations . . . who have been engaged in nurse recruitment activities in recent months, are not satisfied that the needs of the rural communities are being properly considered; specifically that the representatives of the Minnesota Nurses Association . . . lay too much stress on the five-year course, and very little, if any, on the three-year course or the one-year course for training practical nurses.

3. The Minnesota Nurses Association and the Minnesota Hospital Association are not aware of the substantial contribution that has been made by the Minnesota State Medical Association in this respect.

. . . the following applications for Temporary Affiliate Membership were approved: Paul Giere Larson, Montevideo; Hyman Katzovitz, Saint Paul.

The following applications for Affiliate Membership were approved: John W. Helland, Spring Grove; William Howard Hollands, Fisher; H. E. Nelson, Crookston.

Applications for Life Membership were approved as follows: Alphonse E. J. Sohmer, Mankato; Oscar Daignault, Benson; Edward H. Frost, Willmar; J. C. Jacobs, Willmar; J. B. Clement, Lester Prairie; Edwin Elmer Shrader, Winsted; W. E. Wray, Campbell; George P. Kirk, East Grand Forks; Charles B. Lenont, Virginia.

A resolution was approved to authorize the Council of the Minnesota State Medical Association to assume the leadership for establishing a State Health Council in order that the medical profession in this state might maintain supervision over the medical aspects of such a program.

With the completion of routine business, your Council adjourned at 11 p.m. to reconvene at 9 a.m. Sunday morning, May 8.

The morning was devoted largely to a lengthy and spirited discussion . . . on the best approach toward fostering a broad prepayment medical and hospital coverage program for the state.

Three . . . resolutions were adopted by the Council for referral to the Resolutions Committee of the House:

1. A resolution to bend every effort to prevent enactment of laws providing compulsory health insurance or any similar plan which would jeopardize the health of the citizens of the United States.

2. The second resolution expressed opposition to the extension of the Social Security Act to include self-employed individuals.

3. The final resolution expressed appreciation to the local medical society, its committees and its Auxiliary, and to other groups and individuals for their splendid cooperation in assisting with the planning of the Ninety-sixth Annual Meeting of the Minnesota State Medical Association now in progress.

* * *

The House of Delegates approved the report and Speaker Sheppard called for the report of the Finance Committee from Dr. R. L. J. Kennedy, Rochester, Chairman.

Report of the Finance Committee

Dr. Kennedy: Attention is called to the fact that it was predicted last year that at the rate of income that existed then, and with mounting costs of operations, a

*In accordance with action by the Council of the Minnesota State Medical Association in 1944, publication of the proceedings of the House of Delegates is limited to summary. Any MSMA member who wishes to obtain a complete report may do so by contacting his delegate.

deficit would be unavoidable. For this reason the Council recommended an annual assessment of $10 per member to be levied in 1949 and to be replaced in 1950 and thereafter by a $10 increase in annual dues.

The program of the Committees on Public Health Education and Radio was greatly expanded at the direction of the House of Delegates at the meeting in June, 1948.

The return of the membership of the Association to the prewar level tapered off very sharply by December, 1948, due to the fact that most of those who had been inactive because of military service had returned to their practice.

The investment list of the Association underwent little change during the year 1948. According to the financial advisors for the Association, the investment position of the Association is conservative.

* * *

When the contract between the Veterans Administration and the Association comes up for re-negotiation on July 1, 1949, the Association will operate on a strictly month-to-month administrative cost basis so that there will be no uncertainty in the future as to what the income to the Association for services to the Veterans Administration will amount to.

The Finance Committee wishes to acknowledge with thanks the advice and help rendered to it by the Executive Secretary, Mr. R. R. Rosell, throughtout the year and for his aid in preparing this report.

The members of the Finance Committee, in addition to the chairman, are: O. J. Campbell, M.D., Frank Elias, M.D., and Ernest Hammes, M.D.

* * *

In accepting the Finance Committee's report, the House moved to continue the $10 assessment for 1950. In line with the committee's recommendation, thereafter the assessment would be made permanent by amending the Constitution to raise the dues to $30 per capita.

Reports of Reference Committees

The next order of business was the reports of the various reference committees. The Speaker called first upon Dr. R. F. Hedin, Red Wing, Chairman of the Reference Committee on Medical Education Reports.

Medical Education Reports

Dr. Hedin: Your Reference Committee on Medical Education Reports met at 10 a.m., May 8, 1949. The following Medical Education reports were considered:

Committee on Cancer—A. H. Wells, M.D., Duluth, Chairman.

Committee on Conservation of Hearing—L. R. Boies, M.D., Minneapolis, Chairman.

Committee on First Aid and Red Cross—John S. Lundy, M.D., Rochester, Chairman.

Heart committee—F. J. Hirschboeck, M.D., Duluth, Chairman.

Committee on Public Health Nursing—Mario Fischer, M.D., Duluth, Chairman.

Committee on Syphilis and Social Diseases—P. A. O'Leary, M.D., Rochester, Chairman.

Committee on Vaccination and Immunization—Robert N. Barr, M.D., Saint, Paul, Chairman.

Committee on Tuberculosis—J. A. Myers, M.D., Minneapolis, Chairman.

Committee on Hospitals and Medical Education—H. S. Diehl, M.D., Minneapolis, Chairman.

These reports were accepted, together with these Committee recommendations and comments: endorsement of an investigation of the desirability of a state-wide Red Cross Blood Bank distribution; commendation of the excellent work performed by the division of venereal diseases under the direction of Dr. Harry Irvine; suggestion that the Veterans Administration be urged to provide additional facilities to the extent necessary to care adequately for veteran patients suffering from tuberculosis; appreciation for the work of Dr. George Aagaard as director of the postgraduate program for physicians; emphasis on the need for expanding the programs for training of practical nurses and nurse anesthetists.

* * *

Dr. Sheppard next called for the report of the Reference Committee on Miscellaneous Scientific Reports, Dr. E. C. Bayley, Lake City, Chairman.

Miscellaneous Scientific Report

Dr. Bayley: Your committee has carefully considered the following reports:

Committee on Anesthesiology—R. C. Adams, M.D., Rochester, Chairman.

Committee on Child Health—G. B. Logan, M.D., Rochester, chairman.

Committee on Diabetes—J. R. Meade, M.D., Saint Paul, Chairman.

Committee on Fractures—E. T. Evans, M.D., Minneapolis, Chairman.

Committee on General Practice—R. H. Creighton, M.D., Minneapolis, Chairman.

Historical committee—M. C. Piper, M.D., Rochester, Chairman.

Committee on Industrial Health—Leonard Arling, M.D., Minneapolis, Chairman.

Committee on Maternal Health—J. J. Swendson, M.D., Saint Paul, Chairman.

Committee on Medical Testimony—E. M. Hammes, M.D., Saint Paul, Chairman.

Committee on Military Affairs—J. H. Tillisch, M.D., Rochester, Chairman.

Committee on Nervous and Mental Diseases—W. P. Gardner, M.D., Saint Paul, Chairman.

Committee on Ophthalmology—T. R. Fritsche, M.D., New Ulm, Chairman.

Committee on Public Health Education—A. E. Cardle, M.D., Minneapolis, Chairman.

Committee on Radio—R. M. Burns, M.D., Saint Paul, Chairman.

Speakers' Bureau—F. J. Heck, M.D., Rochester, Chairman.

Editorial committee—C. M. Gambill, M.D., Rochester, Chairman.

Your committee approved the above reports . . . with the following qualifications:

This committee wishes to thank Dr. Piper for his years of faithful and loyal service and fine work in establishing full and accurate historical records, and heartily accepts the committee's appointment of Dr. Harry Weber as co-chairman.

With regard to the approach of solving the problem for more physicians in the Armed Forces, the committee feels that if moral suasion does not obtain the required number, there would be no objection to drafting them by law.

Your committee wishes to commend Dr. Walter P. Gardner and his Committee on Nervous and Mental Diseases for the time and effort they have spent and their accomplishments.

Special consideration was given to the report of the Committee on Health Education, which acts in a public relations capacity. Attention was called to the many splendid projects which this committee initiated this year, i.e., the state-wide medical press conference, employment of a field secretary, sponsorship of health councils, preparation and distribution of a special health publication *Health News and Views*.

The report was accepted, with the amendment that forthcoming issues of *Health News and Views* have a card inserted which would read, "Kindly send this to some friends in a neighboring state."

Dr. Sheppard then called for Medical Economics reports, Dr. Paul Leck, Austin, Chairman.

Medical Economics Report

Dr. Leck: The Reference Committee on Medical Economics Reports . . . has considered the annual reports of the following committees:

Editing and Publishing Committee—E. M. Hammes, M.D., Saint Paul, Chairman.
Committee on Interprofessional Relations—W. P. Gardner, M.D., Saint Paul, Chairman.
Medical Advisory Committee—W. H. Hengstler, M.D., Saint Paul, Chairman.
Committee on Medical Economics—George Earl, M.D., Saint Paul, Chairman.
Committee on Medical Ethics—R. D. Mussey, M.D., Rochester, Chairman.
Committee on Public Policy—R. F. Erickson, M.D., Minneapolis, Chairman.
Committee on University Relations—A. E. Cardle, M.D., Minneapolis, Chairman.

The committee approved the reports; passed two motions: (1) that it would recommend to the House of Delegates that Dr. R. F. Erickson be asked to address the House, (2) that an expression of appreciation be extended to Dr. Erickson, Manley Brist, Dr. L. L. Sogge, the Council, R. R. Rosell and his staff for their untiring efforts during the legislative session; and made these recommendations and comments:

. . . that the Editing and Publishing Committee be commended for the maintenance of high standards of Minnesota Medicine, despite the small deficit for the year 1948; that delegates be urged to emphasize to members of each county society the need for continued study and action on medical economic problems.

* * *

Dr. Erickson, Mr. Brist, Dr. Sogge and Dr. Hammes were asked to address the House and each spoke briefly on legislative matters. The men were given a rising vote of thanks and the committee report was accepted.

Dr. Sheppard then called on Dr. B. O. Mork, Jr., Worthington, to discuss health councils. Dr. Mork urged medical men to take the leadership in setting up health units and health councils, pointed out that the movement is endorsed by the AMA, and described the operation of the Nobles county health council which has been in existence for more than a year.

Dr. Sheppard next called for Miscellaneous Medical Economic Reports, Dr. F. W. Behmler, Morris, Chairman.

Miscellaneous Medical Economics Reports

Dr. Behmler: The Reference Committee on Miscellaneous Medical Economics reports considered the following reports:

Insurance Liaison committee—A. W. Adson, M.D., Rochester, Chairman.
Committee on Medical Service—A. W. Adson, M.D., Rochester, Chairman.
Committee on Rural Medical Service—P. C. Leck, M.D., Austin, Chairman.
Committee on State Health Relations—C. E. Proshek, M.D., Minneapolis, Chairman.
Committee on Veterans Medical Service—R. H. Creighton, M.D., Minneapolis, Chairman.

The reports were approved, with these recommendations and comments: that an information office be set up in each county where the public could receive information regarding the voluntary prepayment medical and hospital plan; that special approval be given the report on resolutions that were presented by the Council on Medical Service of the AMA; that the formation of health councils in each county be speeded up, if at all possible; that the study of the coroner situation be continued.

* * *

After House approval of the report, Dr. Sheppard asked for the report of the Reference Committee on Officers and Councilors Reports, Dr. Nelson W. Barker, Rochester, Chairman.

Officers' and Councilors' Reports

Dr. Barker: The Reference Committee wishes to express high commendation of the work of the secretary and the executive secretary. . . . Particular commendation is made of various procedures initiated during the year in the dissemination of information regarding compulsory health insurance, as well as various other new activities which have been carried out by the Central Office during the year. (Medical Press Conference, meeting of County Officers and House of Delegates, appointment of Lyle A. Limond, field secretary, noted.)

Among committee comments and recommendations were: suggested increase in public relations personnel; increased efforts to enlarge membership of State Association; request for more detailed information on financial report; commendation of work of Chairman and Council; approval of re-districting of third and fourth Councilor districts, as proposed by Dr. L. G. Smith; special notice of activities of Nicollet-Le Sueur Medical Auxiliary; commendation of Seventh District plan for channeling publicity and literature; suggestion that Dr. Will explain this plan to House of Delegates and that Dr. W. L. Burnap address the House on the nursing problem.

* * *

Dr. R. L. J. Kennedy was called upon to discuss the financial report at greater length. He cited again that increased and extended activities in virtually all fields had necessitated greater financial appropriations this year.

Dr. A. E. Cardle, chairman of the Public Health Education Committee, was asked to comment on the expanded health education program of the Association. He delineated the differences between the state and national program and pointed out how the two were correlated while still in the planning stage. He called attention to the Medical Press Conference, the tabloid *Health News and Views,* and the supplement being planned for Sunday editions of the Minneapolis, Saint Paul and Duluth newspapers. He also explained the organization of statewide public relations work, mentioning the state office personnel and the part-time public relations consultant employed by the MSMA, all working under the direction of the Health Education committee.

R. R. Rosell, Executive Secretary, was asked to comment on the number of physicians who are members of the State Association.

Mr. Rosell: At the present time I think we do not have over 10 per cent of practicing physicians in the state who are not members of the State Association.

* * *

The report of the Reference Committee on Officers and Councilors Reports was accepted, and the House of Delegates turned to new business.

At this point Dr. J. F. DuBois, Sauk Centre, and Dr. T. E. Bratrud, Thief River Falls, suggested the possi-

bility of increasing the dues to provide more money for health education work. Dr. Cardle indicated the willingness of his committee to accept suggestions for improvement. Dr. F. J. Lexa, Lonsdale, expressed doubt that doctors would react favorably to an increase in dues; while Dr. Gordon MacRae, Duluth, explained the value of assessing extra money on a local level and spending it locally. He detailed the excellent public relations program of the St. Louis county society which is financed by the doctors there and operates within those community boundaries. His sentiment was echoed by two other delegates and by Mr. Rosell.

The order of business was interrupted briefly for an introduction of Mrs. H. F. Wahlquist, State Auxiliary President. Mrs. Wahlquist outlined the Auxiliary's work during the year and concluded with the hope: may we always work together for better health in Minnesota.

After a moment of silence in honor of Mother's Day, the House adjourned at 5:10 p.m.

Second Meeting, Sunday, May 8, 1949

The Terrace, Hotel Lowry
Saint Paul, Minnesota

The House of Delegates reconvened at 8:15 p.m. with the Credentials committee reporting a quorum present. Dr. W. F. Braasch, Rochester, was the first person to address the House. He spoke on behalf of the World Medical Association, which he described as a powerful force for the improvement of health, the progress of medicine, and the promotion of international good will. Reminding doctors that there is a current campaign to have every member of the AMA become a contributing member of the WMA, he urged every doctor present to study the program and take part in it.

The next item of business was a report from Jarle Leirfallom on the activities of the Division of Social Welfare. Mr. Leirfallom remarked on the welfare legislation passed by the 49th legislature, believing it to exceed in amount, and perhaps in quality, welfare legislation passed by any previous session. Mr. Leirfallom reviewed those laws he thought to be of particular signifiance to the medical profession: provision of facilities for the treatment of emotionally disturbed children; change in the adoption law which will cut red tape in getting children out of institutions and into homes; creation of a commission to study divorce, juvenile and desertion laws; requirement that every person placing a child for permanent foster care, or assisting in that placement, report to the Director of Social Welfare; removal of the maximum in aid to dependent children; changes in the tuberculosis control and treatment laws which: raised the amount of state aid for indigent tuberculosis patients, made the control of tuberculosis patients, as public health menaces, easier, and permits the closing of sanitoria when they are no longer of use; appointment of the Director of Social Welfare as co-ordinator of the displaced persons program; setting up of a formula for state financing of relief and welfare services.

Mr. Leirfallom expressed appreciation for the cooperation of the physicians of the state, adding his gratitude for the benefits of a splendid committee which has advised him from time to time.

Dr. F. F. Callahan, chief of the medical unit, Division of Social Welfare, discussed briefly the increase in medical costs, particularly in the old age group.

Dr. Sheppard then called on Dr. O. I. Sohlberg, Saint Paul, who reported on Minnesota Medical Service, now sixteen months old. He emphasized that the more persons enrolled in this program, the less demand for socialization. Of importance, he feels, is the need for every physician to become associated with the program.

Following Dr. Sohlberg's report, Dr. Sheppard asked for reports on the Minnesota State Board of Examiners. Dr. J. S. McCartney, Minneapolis, discoursed on the basic science examinations and Dr. DuBois, on the State Board of Examiners in general.

Outpatient medical care for veterans was discussed before the House by Dr. Richard B. Hullsiek of the Veterans Administration who asked for the continued co-operation of the State association and the profession in general.

Dr. Sheppard next called on Dr. A. J. Chesley to report on the State Department of Health. Following Dr. Chesley was Dr. H. S. Diehl, who, as dean, reported on the University of Minnesota's Medical School. His report was supplemented by the Assistant Dean, Dr. M. M. Weaver. Following Dr. Weaver's remarks, Dr. Hammes and Dr. Sheppard expressed the association's regret that Dr. Weaver is leaving Minnesota and wished him well in his new position as dean of the Medical School of British Columbia.

The House adjourned at 10:40 p.m.

Third Meeting, Monday, May 9, 1949

The Terrace, Hotel Lowry
St. Paul, Minnesota

The House of Delegates reconvened at 1:30 p.m., with a quorum present. The first item of business was a supplemental report of the Council by Dr. Elias. Subject of the report was Minnesota Medical Service. Dr. Elias quoted the anticipation of the Council—that Blue Shield will enroll at least twice as many subscribers in 1949 as it did in 1948. He cited the importance of keeping pace with the trend of the times, in this case, notably, broader coverage for low income groups.

Also included in the final report of the Council were these recommendations: Dr. Cardle, as member of the AMA House of Delegates, to succeed Dr. Hansen; Dr. George Earl, as member of the AMA House of Delegates to succeed Dr. F. J. Savage of Saint Paul; Dr. W. W. Will to succeed himself as alternate delegate, and Dr. E. M. Hammes to succeed Dr. George Earl, Saint Paul, as another alternate delegate to the American Medical Association.

Drs. Theodore Catlin, Buffalo, and F. L. Schade, Worthington, were appointed to continue as members of the Advisory Board to the State Department of Health under the Hospital Licensing Law, and Dr. Thomas E. Broadie, St. Paul, was reappointed to the Advisory Board of the State Department of Health under the Hospital Administrators Registration Law.

The Council did not recommend any additional assessment, feeling that funds presently available are sufficient

for the Public Health Education program on a state level. Component medical societies were urged to take whatever steps were necessary, financially and otherwise, to implement and expand their present public health education programs and initiate such new activities as the local society may endorse. Material developed by the State Office, under the Public Health Education committee's direction, and material from Whitaker & Baxter should be used.

Dr. Elias also read a letter from the Office of the Secretary of Defense, calling attention to the quota of volunteers for the Armed Forces, established for Minnesota on the basis of availability and distribution of physicians.

After the House approved Dr. Elias' report, he read a resolution from the Woman's Auxiliary, opposing compulsory health insurance. The resolution was endorsed by the House.

Next was the report of the Resolutions Committee, Dr. F. J. Hirschboeck, Duluth, chairman.

Resolutions Committee Report

WHEREAS, under the system of private practice of medicine, the health of the people of the United States is better than that of any other people; and

WHEREAS, voluntary, democratic ways have been found most satisfactory in meeting the need for medical care of persons in all income groups, now therefore,

BE IT RESOLVED, that the Minnesota State Medical Association do everything in its power to prevent enactment of laws intended to provide compulsory health insurance or any similar plan which would jeopardize the health of the citizens of the United States.

That a copy of this resolution be forwarded to the President of the United States, to each Senator and Representative from the State of Minnesota, and that said Senators and Representatives be and are hereby respectfully requested to use every effort at their command to prevent the enactment of such legislation.

* * *

WHEREAS, legislation is now under consideration in committees of the Congress of the United States which proposes extension of the Social Security Act to include self-employed individuals, and

WHEREAS, such a measure is destructive of self-reliance in this group of individuals, and

WHEREAS, such individuals would be found to pay amounts greatly in excess of possible benefits to be derived, and

WHEREAS, such legislation would constitute another step toward a completely socialistic state, now, therefore,

BE IT RESOLVED that the Minnesota State Medical Association hereby expresses unalterable opposition to such legislation; That a copy of this resolution be forwarded to the President of the United States, to each Senator and Representative from the State of Minnesota, and that said Senators and Representatives be and are hereby respectfully requested to use every effort at their command to prevent the enactment of such legislation.

* * *

BE IT RESOLVED, that in the interests of good public relations and the furtherance of public confidence in the high standards maintained by the medical profession as a whole, that members of the Minnesota State Medical Association are urged to use prescription blanks which are not identified with drug firms.

* * *

The House of Delegates recognizes and appreciates the contributions of many groups and individuals to the success of the 96th Annual Meeting of the Minnesota State Medical Association.

Specifically the House of Delegates wishes to pay tribute:

To the officers and members of the Ramsey County Medical Society, the Ramsey County Medical Auxiliary, and the Committee on Local Arrangements for their untiring efforts in planning many of the events on the program and in extending the hospitality of the convention city;

To the management of the Hotel St. Paul and the Hotel Lowry for courteous service to convention guests and delegates;

To Radio Stations WCCO, KSTP, WTCN and WMIN for making possible the fine schedule of broadcasts in connection with the meeting; and

To the *Minneapolis Star-Journal,* the *Minneapolis Tribune,* the *St. Paul Dispatch,* the *St. Paul Pioneer-Press,* the United Press and the Associated Press for their excellent advance notices and coverage of the convention.

* * *

BE IT RESOLVED, that the Minnesota State Medical association officially commend Doctor (M. M.) Weaver for his exceptional service to the medical profession of this state.

* * *

WHEREAS, a bill has been passed at the 1949 Legislative session for the improvement in the care of the mentally ill in the State of Minnesota, and

WHEREAS, it may not fulfill all the desired objectives of the Minnesota State Medical association in dealing with this problem, however,

BE IT RESOLVED, that the Minnesota State Medical association commend the members of the 1949 Legislature for the worthy motives in this bill and for its passage; and

BE IT FURTHER RESOLVED, that we urge the entire medical profession of Minnesota to co-operate in every way in the successful carrying out of this program, and that efforts be made in the future to implement existing legislation to further the care of mentally ill patients in our institutions; and

BE IT FURTHER RESOLVED, that a copy of this resolution be sent to each member of the Legislature of Minnesota and the Governor of the State of Minnesota.

* * *

Your committee on Health Education proposes to sponsor, at no expense to the Minnesota State Medical association or its component societies, a special tabloid section on medicine to be issued in connection with the Sunday newspapers of Minneapolis, Saint Paul and Duluth.

The section would tell, by means of pictures, news and feature stories, the progress of medicine in Minnesota. Advertising to finance the tabloid would be paid for by hospitals, optical firms, drug manufacturers, insurance companies and any other ethical groups and individuals allied with medicine.

* * *

WHEREAS, your Committee on Public Health Education believes that there is an increasing need to secure closer understanding with the press of this state and,

WHEREAS, one criticism frequently heard from the press is that the medical profession expects the press to maintain the entire burden of indirect publicity from the doctor to the public without any remuneration and,

WHEREAS, as long as this opinion exists, your committee believes that, with county medical society approval, doctors may place a professional card, stating only the name, address, telephone number and office hours of the doctor, in the local newspaper, provided, however, if a physician is so recognized in his community, he may, with local medical society approval, insert his specialty; the said card not to exceed one column in width and two inches in depth; and, likewise, a component medical society may sponsor special greetings, messages, or announcements in the name of the component society or the

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In Memoriam

E. W. BENHAM

Dr. E. W. Benham for many years a prominent physician in Mankato died June 19, 1949 in Compton, California.

Dr. Benham was born in Cleveland, Ohio, in 1867 and came to Minnesota in his childhood. He was graduated from the Northfield High School and worked for a while as secretary to the chief engineer of the Great Northern Railway.

He graduated from the University of Minnesota Medical School in 1896, practiced for ten years at Madison Lake and Amboy, and spent three years in postgraduate study in the East. He was first associated with Dr. J. H. James in practice at Mankato and later became a member of the Mankato Clinic. Since his retirement five years ago, after forty-seven years of practice, he and Mrs. Benham have spent much of their time in California.

Dr. Benham was a member of the Blue Earth County Medical Society, the Minnesota State and American Medical Associations. He was a member of the Masonic Lodge. St. John's Episcopal Church, the Kiwanis Club and the original Social Science Club.

He is survived by his wife, Louise Oleson Benham, and two daughters, Mrs. Bert Bosteter of Compton, California, and Helen Benham of Monrovia, California.

JAMES H. BENTSON

Dr. James H. Bentson, a native of Saint Paul, died June 28, 1949 of carcinoma of the lung. He was thirty-one years of age.

Born in Saint Paul May 15, 1918, the son of Mr. and Mrs. Mort Bentson and a nephew of the late Dr. Max Hoffman of Saint Paul, he attended the Saint Paul Academy and graduated from the University of Minnesota Medical School in 1942 with M.B. and M.D. degrees.

Since graduation he has been associated with the Mayo Clinic. Two years ago he developed carcinoma of the lung. Keeping his affliction a secret from his parents so as not to cause them to worry, he sought medical advice in eastern clinics to no avail. He died in New York City while on a trip with another member of the Mayo Clinic.

Dr. Bentson, his medical career so tragically terminated at its very beginning, is survived by his parents, a brother, Lawrence of Los Angeles and his grandmothers, Mrs. Esther Hoffman and Mrs. Anna Bentson, both of Saint Paul.

HERBERT A. BURNS

Dr. Herbert A. Burns, recently of Ten Mile Lake, Hackensack, and Minneapolis, died July 8, 1949, following a cerebral hemorrhage. He was sixty-six years of age.

Dr. Burns was born January 12, 1883, at Found du Lac, Wisconsin. A graduate of the University of Minnesota Medical School in 1908, he served seven years as epidemiologist with the State Board of Health, was in the Army for a year and a half and with the United States Public Health Service for three years. Specializing in diseases of the chest he was associated with the Veterans Bureau for five years. He was also at one time superintendent of the tuberculosis sanatorium at Ah Gwah Ching and for thirteen years ran the state sanatorium at Walker. In 1942 he was appointed head of the tuberculosis control unit in state mental hospitals.

Dr. Burns is survived by his wife, four daughters, Mrs. Oscar Kosberg, Little Rock, Ark., Mrs. Richard T. Roberts, Cedar Hills, Tenn., Mrs. Philip Cloutier, Waterloo, Ark., and Mrs. Robert Bagley, Duluth; one son, Dr. Hugh T. Burns of the Panama Canal Zone; one sister, Maud Burns of Hutchinson, Minnesota, and a brother, Dr. Jay H. Burns of Hutchinson.

LLOYD G. DACK

Dr. Lloyd G. Dack, associated for a number of years with the Earl Clinic, Saint Paul, died suddenly of a heart attack while playing golf July 9, 1949. He was fifty-nine years of age.

Dr. Dack was born in Stanton, Minnesota, June 8, 1890. After two years at Carleton College, he attended the University of Minnesota where he graduated with B.S. and M.D. degrees in 1916. He took postgraduate work in eye, ear, nose and throat diseases at New York Postgraduate School and had practiced his specialty in Saint Paul for twenty-one years following a brief period of general practice in Brooten, Minnesota.

Dr. Dack was a member of the Ramsey County Medical Society, the Minnesota State and American Medical Associations, the American College of Surgeons, a fellow in the American Ophthalmological Society, the Medical Assembly and Phi Beta Pi, medical fraternity. He was also a Shriner and a member of the Kiwanis Club.

He is survived by his wife, two daughters, Mrs. Raymond McMahon and Mrs. Jere Dalldorf, and two stepsons, Dr. John C. Poore of Palo Alto, California, and Dr. Thomas N. Poore of Rochester, Minnesota.

JAMES S. GILFILLAN

Dr. James S. Gilfillan, for many years an outstanding internist of Saint Paul, died June 13, 1949. A fractured hip sustained April 16, 1949, doubtless contributed to his death at the age of eighty-one.

Dr. Gilfillan was born in Saint Paul, April 15, 1869, the son of Judge and Mrs. James Gilfillan. He attended public schools in Saint Paul and Shattuck Military Academy in Faribault. His desire to study medicine being disapproved by his father, he obtained employment with the Northern Pacific railway. During this period he began reading medicine and upon the death of his father entered the University of Minnesota Medical School. After graduating in 1897 he transferred to the Univer-

sity of Pennsylvania where he received his medical degree in 1898. His internship was served in Kings County Hospital, Brooklyn, after which he began practice in Saint Paul. In 1907 he took postgraduate work in Vienna.

From 1903 until 1936, Dr. Gilfillan held various appointments on the faculty of the University of Minnesota Medical School, having been Associate Clinical Professor of Medicine from 1915 until 1936.

He was a member of the Miller Clinic during its existance from 1921 to 1933 and had offices in the Hamm Building with Dr. George E. Senkler and Dr. A. R. Hall from 1932 until his retirement in 1938.

Dr. Gilfillan was a member of the Minnesota Academy of Medicine, of which he was president in 1931; Minnesota Society of Internal Medicine; the Ramsey County Medical Society and its president in 1911, and a member of the Minnesota State and American Medical Associations.

Dr. Gilfillan had a wide knowledge of medical literature, a remarkably retentive memory and an unusual ability in judging essentials in making a diagnosis. On the occasion of the testimonial dinner given retiring members of the Medical School faculty on June 10, 1936, the following tribute was paid him:

"A characteristic widely known and acclaimed is his uncompromising honesty, both in opinion and in expression. He has never been known to allow any consideration of circumstance or of personal profit to cause him to waver in this regard. Dr. Gilfillan's teaching and conversation have been salted and peppered, but withal delicately flavored by a sense of humor that make his leadership delightful and never to be forgotten."

Dr. Gilfillan married Hilda Benson in 1906. He is survived by his widow, a son, James, and three grandsons, James, Sterling and Duncan; a brother, Col. Perry Gilfillan, and four sisters, Mrs. Webster Wheelock, Mrs. Samuel Gilbert, Mrs. James Byrd Hewitt, and Mrs. Benjamin C. Bradford, all of Saint Paul.

George E. Senkler
Carl B. Drake

WALTER C. POPP

Dr. Walter C. Popp, consultant in therapeutic radiology at the Mayo Clinic, Rochester, Minnesota, died June 4, 1949 of coronary occlusion. He was forty-seven years of age.

Dr. Popp was born in Pittsburgh, October 24, 1901. He attended St. Vincent College at Latrobe, Pennsylvania, before studying medicine at the University of Pittsburgh, where he graduated in 1929. After interning at St. Francis Hospital in Pittsburgh, he entered the Mayo Foundation as a fellow in dermatology and syphilology on July 1, 1930 and received the degree of M.S. in 1933.

He served successively as associate in roentgen therapy, instructor in radiology and at the time of his death was consultant in therapeutic radiology, the Mayo Clinic, and assistant professor of radiology, the Mayo Foundation.

Dr. Popp was very active in community affairs. He was at one time president of the Rochester Automobile Club, the City-County Safety Council and the Lourdes Parent-Teacher Association. He also served on several committees of the Chamber of Commerce. He was a member of the local county medical society, the Minnesota State and American Medical Associations.

He is survived by his wife and three daughters, Madeline, Jeanne and Barbara, and one sister, Mrs. Peter Sobers of Washington, D. C.

WILLIAM HENRY RUMPF

Dr. William H. Rumpf of Faribault died June 26, 1949 at the age of eighty-two.

Dr. Rumpf was born in Dubuque, Iowa, on January 2, 1867. He attended Brooklyn Polytechnic High School and graduated from Yale College in 1886. His medical education was obtained at the University in Berlin, Freiburg, and Kiel where he obtained his medical degree in 1891. He interned at the Royal Berlin Obstetric Hospital and took postgraduate work in Vienna in 1891.

He came to Faribault in 1902 after having been connected with Northwestern University Medical School for ten years.

Dr. Rumpf is survived by two sons, Dr. C. Walter Rumpf of Faribault and Dr. William Rumpf, Jr., of Dallas, Texas.

THE DOCTOR AND THE PATIENT

The responsibility of the doctor in enabling the patient to gain psychological acceptance of the diagnosis cannot be too strongly emphasized. There is much that auxiliary medical personnel can do, but all that they do cannot equal what the doctor himself can accomplish in helping the patient to develop a constructive attitude toward his illness. The patient "can take it" from the doctor to a degree that no one else can match. The understanding and assurance the patient receives from the doctor have far more effect in creating a frame of mind conducive to successful hospitalization than any help the patient receives from others.—William B. Tollen, Ph.D., VA Pamphlet 10-27, October, 1948.

A GOOD INSECTICIDE, NOT POISON

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sickness due to the DDT itself . . . despite the fact that thousands of tons have been used annually for the past four or five years, in the home and for crop and animal protection." As a precautionary measure modifications of recommendation have recently been made by the Department of Agriculture for the use of DDT on dairy cattle. There is, however, no justification for any public alarm about the safety of the milk supply from the standpoint of possible DDT contamination. This has been agreed upon by the Department of Agriculture, the Army and the Navy, the Pan-American Sanitary Bureau and the Federal Security Agency.—*New England J. Med.*, June 30, 1949.

✦ Reports and Announcements ✦

AMERICAN COLLEGE OF SURGEONS INTER-AMERICAN CONGRESS OF SURGERY

The sixth Inter-American Congress of Surgery will meet as part of the thirty-fifth Clinical Congress of the American College of Surgeons at the Stevens Hotel, Chicago, October 17 to 23. Dr. Frederick A. Collier of Ann Arbor, Michigan, is president and Dr. Arnold Caviglia of Buenos Aires is secretary general.

This will be the first time the Inter-American Congress has been held in the United States. The first Congress was held in 1942 in Santiago, Chile; the second in 1943 in Buenos Aires; the third in 1946 in Montevideo, Uruguay; the fourth in 1947 in Rio de Janeiro; and the fifth in La Paz, Bolivia. Surgical societies of South and Central America are members. Between 200 and 300 Latin-American surgeons are expected to attend, and sessions will be open to Fellows from the United States and Canada.

AMERICAN ACADEMY OF NEUROLOGY

The first national scientific meeting of the American Academy of Neurology was held at French Lick Springs, Indiana, on June 1, 2 and 3. Thirty-eight scientific papers were presented at the meeting, which was attended by almost 300 persons.

The American Academy of Neurology was founded two years ago to foster the progress of clinical neurology. It now has over 700 members. President of the organization is Dr. A. B. Baker of the University of Minnesota.

INTERNATIONAL COLLEGE OF SURGEONS

The United States Chapter of the International College of Surgeons will hold its fourteenth annual assembly in Atlantic City, November 8 through 11. Special surgical clinics will be conducted in Philadelphia hospitals on November 7.

At Atlantic City, scientific sessions will be held in the various surgical specialties. An extensive technical and scientific exhibit will be presented by manufacturers of surgical instruments, x-ray apparatus, operating room and hospital equipment and pharmaceuticals.

Approximately 500 surgeons will be received as Associates and Fellows of the College at the convocation on November 10.

All doctors of medicine interested in surgery are invited to attend the assembly. A program may be obtained from Dr. Arnold S. Jackson, Secretary, Jackson Clinic, Madison 5, Wisconsin.

NATIONAL GASTROENTEROLOGICAL ASSOCIATION

The National Gastroenterological Association will hold its fourteenth scientific session at the Somerset in Boston on October 24 to 26. Among the speakers to present papers at the convention are Dr. Owen H. Wangensteen, University of Minnesota Medical School; Dr. Frank Lahey, Boston; Dr. William B. Castle, Boston; Dr. George Crile, Jr., Cleveland; Dr. Maxwell Finland, Boston; Dr. J. M. T. Finney, Jr., Baltimore, and Lord Alfred Webb-Johnson, president of the Royal College of Surgeons, London, England, who will be a guest of honor at the banquet to be held on Tuesday evening, October 25, 1949.

At the annual banquet to be held at the Somerset, the winner of the National Gastroenterological Association's 1949 Prize Award Contest for the best unpublished contribution on gastroenterology or an allied subject will receive the prize of $100 and a certificate of merit.

Immediately following the convention, on October 27, 28 and 29, the Association is sponsoring a course in Gastrointestinal surgery at the Boston City Hospital.

Further information concerning the program and details of the course may be obtained by writing to the Secretary, National Gastroenterological Association, 1819 Broadway, New York 23, N. Y.

MISSISSIPPI VALLEY MEDICAL SOCIETY

The fourteenth annual meeting of the Mississippi Valley Medical Society will be held at the Jefferson Hotel, St. Louis, September 28, 29 and 30. Over thirty clinical teachers from the leading medical schools will conduct the assembly, the entire program of which is planned to appeal to general practitioners. There will be about sixty scientific and technical exhibits, round-table luncheons, et cetera. No registration fee will be charged, and every ethical physician is invited to attend.

The American Medical Writers Association will also hold its annual meeting at the Jefferson Hotel on September 28.

Programs of both meetings may be obtained from Harold Swanberg, M.D., secretary of both organizations, 209-224 W.C.U. Building, Quincy, Illinois.

CONTINUATION COURSES

Diseases of the Chest

The University of Minnesota announces a continuation course in Diseases of the Chest to be presented on October 20, 21, and 22, 1949. The course is sponsored by the Minnesota Chapter of the American College of Chest Physicians and is intended for general physicians. The course will be held at the Center for Continuation Study on the Minneapolis campus of the University.

Among the subjects to be presented will be "The Work-up of a Patient with an Abnormal Chest X-Ray Shadow," "The Differential Diagnosis of Cardiac and Pulmonary Dyspnea," "The Psychosomatic Aspects of Chest Diseases," and "Acute Respiratory Diseases." Symposia will be held on pulmonary tuberculosis and carcinoma of the lung. A clinical x-ray conference and medical clinic will be held on chest diseases.

Dr. O. A. Sander, Milwaukee, Wisconsin, will discuss

"The Pneumoconioses," as a visiting faculty member for the course. Clinical and full-time members of the staff of the University Medical School and the Mayo Foundation will complete the faculty for the course.

Pediatric Roentgenology

The University of Minnesota announces a continuation course in Pediatric Roentgenology on October 31 to November 5, 1949. The course, which will be presented at the Center for Continuation Study, is intended for radiologists and pediatricians. The material to be presented will include the basic medical sciences, clinical medicine, and diagnostic roentgenology, as it pertains to general and special problems in the field of childhood diseases. Presentation will be by means of lectures, clinics, conferences, and round-table discussions.

Distinguished visiting physicians who will participate as members of the faculty for the course will include Dr. John Caffey, Babies Hospital, Columbia University Medical Center; Dr. Edward B. D. Neuhauser, Children's Hospital, Boston; Dr. Edith Potter, University of Chicago; and Dr. Frederic N. Silverman, Children's Hospital, Cincinnati. The remainder of the faculty for the course will be made up of clinical and full-time members of the staff of the University of Minnesota Medical School and the Mayo Foundation.

Infectious Diseases

The University of Minnesota announces a continuation course in Infectious Diseases on October 3, 4, and 5, 1949. The course will be presented at the Center for Continuation Study and is intended for general physicians.

Among the subjects to be presented will be "Laboratory Facilities Needed by and Available to the Practicing Physician for the Diagnosis of Infectious Diseases," "Immunization Procedures," "Chemotherapy and the Antibiotics." Symposia will be held on rheumatic fever, virus diseases, and poliomyelitis.

Dr. Louis Weinstein, Chief of the Department of Infectious Diseases at Massachusetts Memorial Hospital, Boston, will be a visiting member of the faculty for the course. Dr. Weinstein will present the subjects, "The Pneumonias," and "The Current Concepts of the Common Cold and Influenza." The remainder of the faculty for the course will be made up of clinical and full-time staff members of the University of Minnesota Medical School and the Mayo Foundation.

✦ Woman's Auxiliary ✦

WA PRESIDENT REVIEWS NATIONAL CONCLAVE

Mrs. H. E. Bakkila

Auxiliary members throughout the country can take credit, in large measure, for postponement of the issue of compulsory health insurance, according to Leone Baxter, of Whitaker & Baxter, directors of the AMA's National Education Campaign.

Miss Baxter, addressing the national Auxiliary convention in Atlantic City, praised the Auxiliary for helping to get the story of American medicine and the voluntary health insurance plan before the people of the United States. She said the enlistment of friends' and neighbors' help in writing congressmen and stating objections to any form of compulsory health insurance had helped immeasurably in delaying action on the bill.

Specifically, the action of the General Federation of Women's Clubs at the recent convention can be attributed to doctors' wives working together for one purpose, she stated. The Women's Club members passed a resounding and unequivocal resolution against the socialized medicine proposal, thereby chalking up another important organization name on the list of national, state and local groups which have recorded their convictions to be in accord with the principles of democracy and free enterprise.

After commending the activities of the past year and urging their continuance, Miss Baxter sought the cooperation of the Auxiliary in the latest Education Campaign project: equipping every doctor's office with a copy of Sir Luke Fildes' painting of "The Doctor."

Miss Baxter's approbation was echoed by other convention speakers, among them: Miss Mary McGinn, director of the Women's Division, Whitaker & Baxter; Dr. R. L. Sensenich, president of the AMA and Dr. Ernest E. Irons, president-elect; Dr. Elmer Henderson, chairman, Board of Trustees; Dr. J. J. Moore, treasurer; Dr. George F. Lull, secretary and general manager.

To re-emphasize its own position in the controversy of health insurance, the Auxiliary resolved:

WHEREAS, the people of the United States are provided with medical care of the highest quality of any nation in the world developed under our free system of private initiative; and

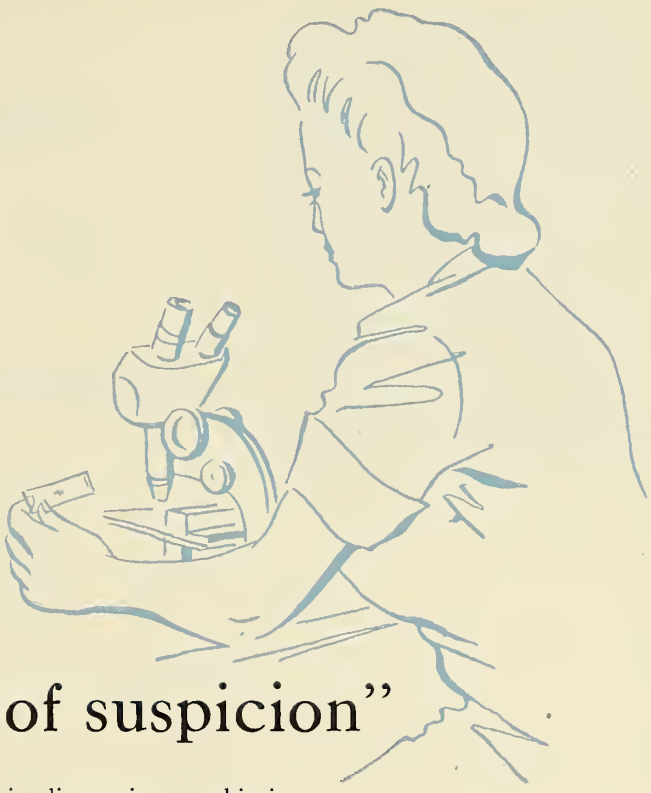
WHEREAS, there is documentary proof that compulsory health insurance in other countries has resulted in lowering the standard of medical service, invaded family privacy, destroyed the patient-physician relationship, and eliminated the free choice of family physician demanded by liberty loving people; and

WHEREAS, government controlled medical care programs have caused constant increase in taxation with continued *decrease* in "take-home pay," thus lowering family standards of living; and

WHEREAS, government interference in the practice of medicine as now proposed in bills before congress would destroy the growth and expansion of the voluntary prepaid medical plans as approved by the American Medical association and this body, would threaten national bankruptcy, and endanger the health and welfare of our children; therefore be it

RESOLVED, that the Woman's Auxiliary to the American Medical association, in convention assembled this eighth day of June, 1949, does hereby go on record against any

(Continued on Page 846)



"A high index of suspicion"

The difficulties and pitfalls in diagnosing amebiasis are stressed frequently in medical literature.

". . . despite the absence of a history of dysentery, amebiasis must be considered in the differential diagnosis of many bizarre clinical syndromes. . . . A high index of suspicion is the keynote of early diagnosis."[1]

In acute or latent forms of amebiasis, Diodoquin may be employed over prolonged periods. This high-iodine-containing amebacide "is well tolerated. . . . The great advantage of this simple treatment is that in the vast majority, it destroys the cysts of *E. histolytica* and is, therefore, especially valuable in sterilizing 'cyst-carriers.' It can readily be taken by ambulant patients and, therefore, eliminates the necessity of hospitalization."[2]

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G. D. Searle & Co., Chicago 80, Illinois

1. Warshawsky, H.; Nolan, D. E., and Abramson, W.: Hepatic Complications of Amebiasis, New England J. Med. *235*:678 (Nov. 7) 1946.

2. Manson-Bahr, P.: Some Tropical Diseases in General Practice: "A Post-War Legacy," Glasgow M. J. *27*:123 (May) 1946.

NATIONAL CONCLAVE

(Continued from Page 844)

form of compulsory health insurance or any system of political medicine designed under the guise of public welfare; and be it further

RESOLVED, that the Woman's Auxiliary to the American Medical association herein reaffirms its belief in the American Medical association policy of expansion of voluntary prepayment medical insurance plans which can most economically provide maximum, high-standard medical care to the American people; and be it further

RESOLVED, that a copy of this resolution be forwarded to the President of the United States, to members of congress, and to each Woman's Auxiliary to respective State Medical societies.

* * *

Minnesota's past president, Mrs. Harold Wahlquist, was elected first vice president of the national organization, and another Minnesota member, Mrs. Charles W. Waas, was elected to membership on the Nominating Committee for the 1950 convention in San Francisco. Other new officers are:

President: Mrs. David B. Allman, Atlantic City, New Jersey.

President-elect: Mrs. Arthur A. Herold, Shreveport, Louisiana.

Second Vice President: Mrs. Henry Garnjobst, Corvallis, Oregon.

Third Vice President: Mrs. W. E. Hoffman, Charleston, West Virginia.

Fourth Vice President: Mrs. Mason G. Lawson, Little Rock, Arkansas.

Treasurer: Mrs. George Turner, El Paso, Texas.

Constitutional Secretary: Mrs. Harry M. Gilkey, Kansas City, Missouri.

Historian: Mrs. Jesse D. Hamer, Phoenix, Arizona.

Parliamentarian: Mrs. William E. Dodd, Beach Haven, New Jersey.

SECOND PR WORKSHOP SET FOR SEPTEMBER 22

Mrs. Reuben Erickson

Recognizing again this year the importance of public relations techniques in mobilizing opinion against compulsory health insurance, the Auxiliary has scheduled its second annual Workshop for September 22, at the Hotel Radisson, Minneapolis.

The tentative program schedule calls for registration at 9 a.m. The morning will be devoted largely to a delineation of the issues at stake and the plans which are being followed by the State Medical association and the National Education Campaign, being conducted for the American Medical association by Whitaker & Baxter.

J. S. Jones of the Minnesota Farm Bureau will discuss the general threat of socialism, while Dr. A. E. Cardle, chairman of the MSMA Committee on Public Health Education, will describe the Minnesota program, and Miss Mary McGinn, director of the Woman's Division of Whitaker & Baxter, the national campaign.

Technical information will be divulged during the afternoon session by experts in newspaper, radio, visual education, and other public relations fields.

The Auxiliary is particularly anxious to have officers of county Auxiliaries, publicity, public relations and legislative chairmen and members-at-large attend. Any Auxiliary member who is interested in being present may check with the program chairman or the State Medical association office.

The Radisson is keeping a number of rooms in reserve for the night of September 22, thus facilitating the schedule of those who will be attending the Workshop and also the fall board meeting which is slated for the morning of September 23, in the Italian room of the Radisson.

SUMMARY OF PROCEEDINGS
HOUSE OF DELEGATES

(Continued from Page 840)

members thereof, including announcements, messages and other material sponsored by the component society in co-operation with other groups, therefore,

BE IT HEREBY RESOLVED, that the Minnesota State Medical association go on record as approving such cards, announcements, messages and other material, provided the same meets the approval of the component medical society.

* * *

The House of Delegates approved all of the resolutions, thus completing the report of the Resolutions Committee.

Election of Officers

The next order of business was the election of officers. The following were unanimously elected by the Delegates:

President-Elect—F. J. Elias, M.D., Duluth.

First Vice President—W. F. Hartfiel, M.D., Saint Paul.

Second Vice President—C. W. Moberg, M.D., Detroit Lakes.

Secretary—B. B. Souster, M.D., Saint Paul.

Treasurer—W. H. Condit, M.D., Minneapolis.

Speaker, House of Delegates—C. G. Sheppard, M.D., Hutchinson.

Vice Speaker—H. M. Carryer, M.D., Rochester.

Councilor, Third District—L. G. Smith, M.D., Montevideo.

Councilor, Fifth District—Justus Ohage, M.D., Saint Paul.

Councilor, Seventh District—W. W. Will, M.D., Bertha.

Councilor, Ninth District—A. O. Swenson, M.D., Duluth.

Delegates to the American Medical Association—A. E. Cardle, M.D., Minneapolis; George Earl, M.D., Saint Paul.

Alternates—W. W. Will, M.D., Bertha; E. M. Hammes, M.D., Saint Paul.

Meeting Place 1950 Convention

The final order of business was the selection of the meeting place for the 1950 Convention. The House of Delegates voted to accept the invitation from the St. Louis County Medical Society to hold the meeting in Duluth.

At 3:20 p.m. the Ninety-sixth Annual Meeting of the House of Delegates was adjourned.

FROM SECRETARY OF DEFENSE LOUIS JOHNSON—

AN URGENT APPEAL TO YOUNG DOCTORS!



Your personal help is needed to avert a serious threat to our national security!

By the end of July of this year we will have lost almost one-third of the physicians and dentists now serving with our Armed Forces. Without an increased inflow of such personnel, the shortage will assume even more dangerous proportions by December of this year.

These losses are due to normal expiration of terms of service. The professional men who are leaving the Armed Forces during this critical period are doing so because they have fulfilled their duty-obligations and have earned the right to return to civilian practice.

Without sufficient replacements for these losses, we cannot continue to provide adequate medical and dental care for the almost 1,700,000 service men and women who are the backbone of our nation's defense.

Normal procurement channels will not provide sufficient replacements!

To alleviate this critical, impending shortage of professional manpower in the three services, I am urging all physicians and dentists who were trained under wartime A. S. T. P. and V-12 programs under government auspices or who were deferred in order to complete their training at personal expense, *and who saw no active service*, to volunteer for a two-year tour of active duty, at once!

We have written personally to more than 10,000 of you in the past weeks urging such action. The response to this appeal has not been encouraging, and our Armed Forces move rapidly toward a professional manpower crisis!

Many responses have been negative, but worse—a great number of doctors have not replied. It is urgent that we hear from you immediately!

We feel certain that you recognize an obligation to your fellow men as well as to your profession in this matter. We are confident that you will fulfill that obligation in the spirit of public service that is a tradition with the physician and dentist.

There is much to be said for a tour of duty with any of the Armed Forces. You will work and train with leading men of your professions. You will have access to abundant clinical material; have the best medical and dental facilities in which to practice. You will expand your whole concept of life through travel and practice in foreign lands. In many ways, a tour of service will be invaluable to you in later professional life!

Volunteer now for active duty. You are urged to contact the Office of Secretary of Defense by collect wire immediately, signifying your acceptance and date of availability. Your services are badly needed. Will you offer them?

Louis Johnson

Of General Interest

The American Red Cross Saint Paul Regional Blood Center has been supplied with serum albumin in 100 c.c. containers complete with recipient sets for treatment of shock, hypoproteinemia, nephrosis, burns, et cetera. Immune serum globulin in 2 c.c. ampoules for prophylaxis and treatment of measles has also been received for distribution. These products are supplied by the American National Red Cross and may be obtained without cost by application to Dr. E. V. Goltz, Technical Director, Saint Paul Regional Blood Center, 91 E. Kellogg Boulevard, Saint Paul 1, Minnesota. Telephone: GArfield 4981.

Since the supply of these products is limited, they can not be supplied for storage or general distribution. Dr. Goltz has been instructed to send units out only upon the request of a physician who gives the patient's name, diagnosis, and number of units he proposes to administer.

* * *

Dr. William C. Bernstein, Saint Paul, was recently promoted from instructor to clinical assistant professor of proctology at the University of Minnesota.

* * *

"Sarcoidosis of the Orbit" was the title of a paper presented by Dr. Frank N. Knapp and Dr. William V. Knoll, Duluth, at the annual meeting of the American Ophthalmological Society at Hot Springs, Virginia, June 3.

* * *

Examinations for appointments to the grade of Lieutenant (jg) will be conducted in all U. S. Navy hospitals from September 12 to 16. Graduates of approved medical schools who have completed intern training or who will complete such training within four months of the date of examination, and who are physically fit and less than thirty-two years of age, may take the examination. Compensation for those accepted for naval service, including rental and subsistance allowances, is $5,011 for those with dependent and $4,575 for those without.

Detailed information may be obtained from the offices of Naval Officer procurement or from the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

* * *

Among physicians attending a continuation course in the treatment of tumors, held at the University of Minnesota early in June, was Dr. Ernest O. Hanson of Cloquet.

* * *

Dr. Howard M. Wikoff, after completing a three-year fellowship in internal medicine at the University of Minnesota, became associated with the Bemidji Clinic in June. A graduate of the University of Minnesota Medical School in 1940, Dr. Wikoff interned at Minneapolis General Hospital and then spent three and a half years in military service. He will limit his practive in Bemidji to the field of internal medicine.

Dr. John J. Hochfilzer, Saint Paul, left for England on July 15 to attend the Fourth International Congress of Otolaryngology in London.

* * *

At the fifteenth annual meeting of the American College of Chest Physicians, held in Atlantic City, June 2 through 5, Dr. John R. McDonald, Rochester, presented a paper entitled "Carcinoma of the Lung: Its Diagnosis by Cytologic Examination of Sputum and Bronchial Secretions."

* * *

During the last school year the activities of the Department of Postgraduate Medical Education at the University of Minnesota returned to the level reached before the war. In his annual report, Dr. George N. Aagaard, director of the department, stated that a total of 4,163 persons were enrolled in twenty-six continuation courses for physicians and twenty-five courses for workers in fields related to medicine.

Among new courses offered during the year were a course in child psychiatry for pediatricians and general practitioners and a two-week course in psychosomatic medicine. Both were enthusiastically received.

Another innovation was the presentation of a course in electrocardiography, one evening a week for twelve weeks, for physicians in the Twin Cities area. The course was oversubscribed, and two sections had to be organized. A similar ten-week course was later conducted in St. Cloud by Dr. Aagaard, and upon its completion the physicians who had attended it formed a study club to continue their work in the subject.

Other than the courses for physicians, special courses were offered for non-physician workers in such related medical fields as nursing, pharmacy, public health, child care and education.

* * *

Dr. E. W. Arnold of Adrian participated in a radio broadcast over a local station on June 12. He discussed the Blue Cross and Blue Shield health plans.

* * *

Principal speaker at a meeting of the Blue Earth Community Hospital staff, held at the Riverside Town and Country Club on June 2, was Dr. Bernard J. Spencer of Blue Earth. Dr. Spencer, who recently spent a year at the Children's Hospital in Boston, discussed the diagnostic signs that indicate which "blue babies" might be helped by an operation.

* * *

In Anoka, Dr. Joseph E. Twidwell became associated in practice with Dr. Frank E. Mork and Dr. A. Harold Mork on July 1. A graduate of Creighton University School of Medicine, Dr. Twidwell served his internship at the Lutheran Hospital in Omaha, Nebraska, and took further training at St. Mary's Hospital, Minneapolis.

* * *

New officers of the Minnesota Surgical Society, elected at a recent meeting in Duluth, are Dr. Gordon MacRae,

Duluth, president; Dr. L. W. Johnsrud, Hibbing, vice president, and Dr. M. G. Gillespie, Duluth, secretary-treasurer.

* * *

A new program of scholarships, to start in the fall, is being offered to undergraduate students in the University of Minnesota Medical School by the Minnesota Medical Foundation, it was announced on July 11 by Dr. Owen H. Wangensteen, president of the Foundation.

The scholarships will be awarded annually in amounts totalling $2,500, with individual grants ranging between $500 and $1,000. Students who will be members of the sophomore, junior and senior classes in the fall are eligible to apply for scholarships. Scholastic standing and financial need will be important factors in the awarding of the scholarships.

The program was drawn up by a committee headed by Dr. Wesley W. Spink, professor of medicine at the University. Other members of the committee were Dr. Howard Horns, assistant dean of the medical school, and Dr. George N. Aagaard, director of postgraduate medical education at the University.

* * *

Dr. J. J. Yaeger resigned from the Cairns Clinic in Redwood Falls on June 23 to accept a post as assistant resident physician in pediatrics at the Children's Hospital, Denver, Colorado. Dr. Yaeger is being replaced, Dr. R. J. Cairns has announced, by Dr. James B. Flinn, who was associated with the clinic in 1947 and 1948. Dr. Flinn has been practicing for the last year at the General Hospital in Louisville, Kentucky.

"Neurologic Lesions in the Newborn: Effect of Prolonged Labor and Asphyxia" was the title of a paper presented by Dr. H. M. Keith, Rochester, at a meeting of the Canadian Society for the Study of Diseases of Children which was held at Alexandria Bay, New York, during the middle of June.

* * *

It was announced early in June that Dr. Henry Hutchinson had been appointed full superintendent of the Moose Lake State Hospital. Dr. Hutchinson has served as acting superintendent for the past several years. Except for a period of three years during the war, he has been affiliated with the hospital since 1938.

* * *

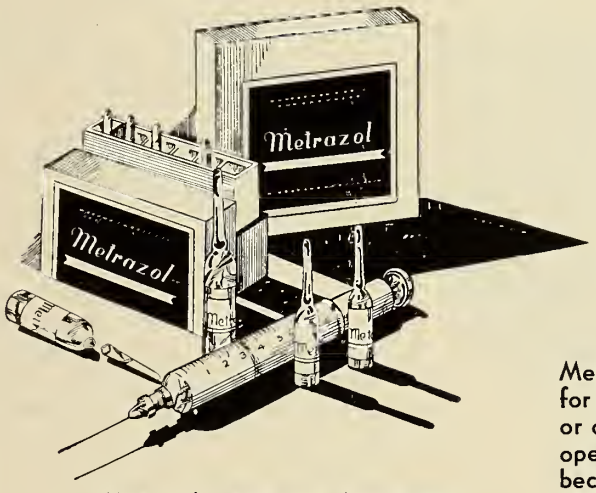
Dr. Raymond B. Allen, president of the University of Washington and a former fellow in the Mayo Foundation, was appointed early in June to direct unification of the army, navy and air force medical services. Dr. Allen entered the Mayo Foundation on July 1, 1930, and received a Ph.D. degree in urology from the University of Minnesota in 1934.

* * *

Dr. Austin V. Denman, Mankato, attended the June graduation exercises at the University of Louisville, Kentucky, where he participated in a reunion of the Class of 1909. One of Dr. Denman's former classmates was Dr. E. L. Henderson, Louisville, newly elected president of the AMA.

* * *

At a meeting of the Zenith City Post No. 487 in Duluth on June 15, Dr. Roy C. Pederson of Duluth



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SURGERY—Intensive course in Surgical Technique, two weeks, starting August 22, September 26, October 24.
Surgical Technique, Surgical Anatomy, Clinical Surgery, four weeks, starting September 12, October 10.
Surgical Anatomy and Clinical Surgery, two weeks, starting September 26, October 24.
Surgery of Colon and Rectum, one week, starting September 12, October 10.
Esophageal Surgery, one week, starting October 10.
Thoracic Surgery, one week, starting October 3.
Breast and Thyroid Surgery, one week, starting October 10.
Fractures and Traumatic Surgery, two weeks, starting October 3.
GYNECOLOGY—Intensive Course, two weeks, starting September 26, October 24.
Vaginal Approach to Pelvic Surgery, one week, starting September 19, November 7.
OBSTETRICS—Intensive Course, two weeks, starting September 12, November 7.
MEDICINE—Intensive General Course, two weeks, starting October 3.
Gastroenterology, two weeks, starting October 24.
Gastroscopy, two weeks, starting September 26, October 24.
Electrocardiography and Heart Disease, four weeks, starting September 7.
DERMATOLOGY—Formal Course, two weeks, starting October 24.
Informal clinical course every two weeks.
ROENTGENOLOGY—Diagnostic and Lecture Course first Monday of every month.
Clinical Course third Monday of every month.
X-ray therapy every two weeks.
UROLOGY—Intensive Course, two weeks, starting September 26.
Ten-day Practical Course in Cystoscopy every two weeks.

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spoke on "Government Trend Toward Control of the Practice of Medicine." A question-and-answer period followed Dr. Pederson's talk.

* * *

A paper entitled "Recognition and Treatment of Congenital Dislocation of the Hip During the First Six Months of Life" was presented by Dr. Vernon L. Hart, Minneapolis, at the Harvard Medical School on June 4. Dr. Hart also presented a paper on the same subject at the AMA meeting in Atlantic City. A motion picture by Dr. Hart and his associate, Dr. Wesley H. Burnham, was shown in the scientific exhibit each day of the AMA meeting.

* * *

Dr. E. Mendelssohn Jones, Saint Paul, has been reappointed as a member of the state board of medical examiners. His new term will end on May 1, 1956.

* * *

The resignation of Dr. Philip C. Welton, Wabasha, as superintendent and medical director of the Buena Vista Sanatorium was announced on June 8. Dr. Welton said that he resigned "because of a conflict of policies in the sanatorium commission." It was stated that Dr. Welton, following his resignation, planned to establish a private practice in Winona.

* * *

The purchase of valuable historical medical books for the medical library at the University of Minnesota was made possible in July, when $3,735 was presented to the Friends of the University of Minnesota Library through the Greater University Fund. The money was a gift of the University's medical school classes of 1922-1923 and was raised by a committee headed by Dr. Owen H. Wangensteen, chairman of the department of surgery, during the 1948 and 1949 campaigns of the Greater University Fund. The gift was designated for the purchase of medical books and papers for which no other funds were available.

* * *

Among the new officers of the Minnesota Heart Association, elected at the organization's annual meeting in Minneapolis on July 12, are Dr. John F. Briggs, Saint Paul, president; Dr. Grace Roth, Rochester, first vice president, and Dr. H. B. Sweetser, Minneapolis, second vice president.

* * *

Dr. Sidney A. Slater, superintendent of the Southwestern Minnesota Sanatorium, was the principal speaker at a meeting of the Worthington Civic Co-operative Club in Worthington on July 18.

* * *

It was announced on July 15 that Colonel Samuel F. Seeley, formerly of Minneapolis, had become chief of the surgical service at Walter Reed General Hospital in Washington, D. C. A graduate of the University of Minnesota Medical School in 1927, Dr. Seeley studied surgery at the Mayo Clinic during 1934 and 1935.

* * *

Dr. Richard J. Salk, a former resident of Sauk Rapids, became associated in practice with Dr. F. H. Baumgartner in Albany on July 1. Dr. Salk, a graduate of

the University of Minnesota Medical School, served his internship at Ancker Hospital, Saint Paul.

* * *

Certificates and insignia were presented by Dr. Russell M. Wilder, Rochester, to twenty-four dietetic interns at exercises at St. Mary's Hospital in Rochester on June 21.

* * *

After twenty-five years of practice in Albert Lea, Dr. Donald S. Branham left during the middle of July to become a staff member of the St. Peter State Hospital. When Dr. Branham first located in Albert Lea he was associated with the late Dr. H. D. Burns. Later he became a co-founder of the Medical Arts Clinic with Dr. S. A. Whitson. During the recent war he served in the Aleutians and on the Pacific Coast.

* * *

Dr. Robert N. Barr was appointed deputy executive officer of the Minnesota Health Department at a meeting of the State Board of Health at the University of Minnesota on July 14. His new position is the first such post in the organization's history.

A graduate of the University of Minnesota Medical School in 1930, Dr. Barr conducted a general practice for three years, then joined the Minnesota Health Department as an epidemiologist. In 1937 he received a master's degree in public health at Johns Hopkins University. He served in the Pacific Theater during World War II, then returned to Minneapolis to become chief of the section of departmental administration in the Health Department. In May, 1948, he became chief of the special services section, and he will continue to hold that position in addition to his new appointment.

It was predicted at the time of Dr. Barr's appointment as deputy executive officer that he will succeed Dr. A. J. Chesley, secretary and executive officer, when Dr. Chesley, now seventy-two, retires. No retirement plans have been announced, however, by Dr. Chesley.

* * *

Dr. Russell R. Hendrickson, Lake Park, resigned his post at the Sand Beach Sanatorium as of August 1. It was announced that Dr. Hendrickson planned to move to Crookston.

* * *

Having completed his internship at Minneapolis General Hospital, Dr. James H. Walston has become associated in practice with Dr. M. I. Hauge in Clarkfield. Dr. Walston is a graduate of the medical school at Northwestern University.

* * *

Dr. John Bellamo, who recently completed his internship at Ancker Hospital, Saint Paul, has opened offices for the practice of medicine in Grand Meadow.

* * *

In Slayton, Dr. Philip W. Hursh became associated in practice with Dr. Hugh D. Patterson on July 1. A graduate of the University of Minnesota Medical School in 1943, Dr. Hursh interned at Queen's Hospital in Hon-

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olulu, then served in the army in the Pacific area. Following his discharge, he was a resident physician at Asbury Hospital, Minneapolis, for a year and at the Students' Health Service, University of Minnesota, for another year.

* * *

It was announced on July 9 that a new physician, Dr. Richard Hartzell, who recently served in the U. S. Navy, had arrived in Grantsburg.

* * *

Dr. Joseph P. Healy, until recently a surgical resident at St. Luke's Hospital, Saint Paul, opened offices for the practice of medicine in New Richmond on July 11. Dr. Healy, a graduate of Creighton University, interned at St. Joseph's Hospital, Saint Paul.

* * *

During the latter part of June, Dr. O. H. Hegge of Austin attended the annual meeting of the American Railway Surgeons in Chicago.

* * *

The annual report of the Minneapolis Public Schools Health Service, released on July 16 by Dr. Hermina Hartig, chief school physician, showed that 15,934 Minneapolis school children were examined in 1948-1949—an increase of 5,000 over the previous year. The eight physicians who gave part-time service to the schools detected numerous ailments. Eye and ear defects were found in about 12 per cent of the children. The physicians discovered 560 cases of malnutrition and 230 cases of athlete's foot. The more common communicable diseases were found in the same incidence as in previous years, but the number of poliomyelitis cases went from five in 1947-1948 to sixty-six in 1948-1949. The report revealed that only 15 per cent of Minneapolis public school pupils have not been immunized against smallpox and that 6 per cent have not been immunized against diphtheria.

* * *

Dr. James E. Murphy, who practiced in Sauk Rapids for several years, moved to Staples in June and opened offices for the practice of medicine. A graduate of the University of Minnesota Medical School in 1938, Dr. Murphy served his internship at Miller Hospital, Saint Paul. He was in military service for five and one-half years.

* * *

Red Wing acquired a new physician near the end of June when Dr. George M. Hawley, formerly of Dallas, Texas, opened offices for the practice of medicine at the Medical Block Clinic. A graduate of Johns Hopkins School of Medicine, Dr. Hawley interned at Johns Hopkins Hospital and the University of Rochester. During the recent war he served for three and one-half years in the navy. For the past three years he has been associated with the Southwestern Medical Foundation in Dallas.

The name of Dr. Hawley is not new in Red Wing. The present Dr. Hawley's grandfather, Dr. A. B. Hawley, was prominent in early Red Wing history. He arrived in the community in 1857 to become one of its first physicians.

Dr. M. B. Hesdorffer, medical consultant for the Veterans Administration insurance service program in the Minneapolis area, was named director of the health and medical care division of the Hennepin County Community Chest and Council, effective July 15. Dr. Hesdorffer, a graduate of the University of Minnesota Medical School, replaces Dr. D. A. Dukelow, who left on March 1 to become medical consultant on health and fitness for the AMA in Chicago. Dr. Hesdorffer was with the United States Public Health Service for three years and was in private practice in Minneapolis for one and one-half years.

* * *

Dr. James H. Reinhardt, a former resident of Detroit Lakes, and Miss Frances Kraemer, of Glen Lake, were married in Hopkins on June 22. Dr. Reinhardt, a graduate of Temple University Medical School, is beginning his medical practice in Red Lake Falls.

* * *

A one-week trip to Glacier National Park highlighted the last week of June for Dr. and Mrs. A. C. Baker of Fergus Falls. On the trip Dr. Baker attended the Great Northern Surgeons' convention which was held at the Glacier Park Hotel.

* * *

On July 1, Dr. Doreen A. Martin began her medical practice at the Community Clinic in her home town of Wabasha. A graduate of the University of Minnesota Medical School, Dr. Martin served her internship at Grace Hospital, Detroit, and at Swedish Hospital, Minneapolis.

In Rochester, Dr. H. A. Wente, formerly of Moose Lake, opened offices on July 15 for the general practice of medicine. Dr. Wente is a graduate of the University of Minnesota, and he served his internship at St. Joseph's Hospital, Milwaukee. He recently completed a term of service in the army, being stationed in the Orient.

* * *

Dr. B. J. Branton, mayor of Willmar, was chairman of a Kandiyohi County pageant, "Sweet Land of Liberty," which was presented at Willmar on June 21 and 22.

* * *

A discussion of the emotional problems of tuberculosis patients was presented by Dr. Harry A. Wilmer at a meeting in Minneapolis in mid-June sponsored by the Hennepin County Tuberculosis Association. Dr. Willmar, a Fellow of the Mayo Foundation in Rochester, is the creator of "Huber the Tuber," a cartoon character in Dr. Wilmer's book on tuberculosis.

* * *

After eighteen years of working in inadequate office quarters, Dr. Ralph B. Johnson of Lanesboro is moving into his own building—designed and constructed according to his own carefully planned specifications. Construction of the one-story brick building began in May and was expected to be completed in August. Plans called for the new structure to contain a reception room, a business office, two examining rooms, an x-ray room, a room for minor operations, and a laboratory.



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Dr. William O. McLane, formerly of Wadena, became a member of the staff of the Bratrud Clinic in Thief River Falls on July 1. He is specializing in diseases of the eye, ear, nose and throat. He replaces Dr. John Lehman, who recently moved from the city. Dr. McLane was graduated from the Rush Medical College, Chicago, in 1928. He conducted a general practice until 1944, when he was awarded a postgraduate teaching fellowship in otology and otolaryngology at the University of Illinois and the Illinois Eye and Ear Infirmary in Chicago. Following this, he practiced for a time in Duluth and in Wadena.

* * *

A painting by Dr. H. B. Clark of St. Cloud was one of the winning entries in the annual American Physicians Art Association exhibit at the AMA convention in Atlantic City in June. For Dr. Clark it was the second award of merit to be won by him in the association contests. Another painting of his placed as a winner in the 1948 exhibit.

* * *

On July 24, the residents of Morton and the surrounding country gathered in the Morton community hall to honor the eighty-seventh birthday of Dr. Fletcher Penhall, who practiced medicine in the community for fifty-three years. Dr. Penhall came to Morton in 1891 and practiced there until 1944, when he joined the staff of the Willmar State Hospital.

* * *

Dr. David W. Feigal, recently of Graceville, began practice in the Lake Minnetonka area early in July when he became associated with Dr. W. W. Rieke of Wayzata. The two physicians have opened an additional office at Long Lake where Dr. Feigal maintains office hours several afternoons each week.

A graduate of the University of Minnesota Medical School in 1947, Dr. Feigal served his internship at Ancker Hospital, Saint Paul. He practiced at Graceville for one year before joining Dr. Rieke.

* * *

Dr. and Mrs. Charles G. Forrest of Clearbrook were named Minnesota's "happiest married couple" in a contest sponsored by the Minneapolis Aquatennial and the Bride and Groom radio show in June. They were nominated for the award by their daughter. As the "happist couple" they were special Aquatennial guests and were later flown to California for a vacation. Dr. Forrest has practiced medicine in Clearbrook for forty years.

* * *

Two papers were presented by Dr. John J. Pemberton, Rochester, at a meeting of the Rocky Mountain Cancer Conference in Denver on July 14 and 15. They were entitled "Malignant Tumors of the Thyroid Gland" and "Maligant Lesions of the Lower Lip."

* * *

Dr. Wallace L. Fritz of Saint Paul lost a race with the stork on July 20. He was taking his expectant wife to Bethesda Hospital when a flat tire—his first in thirteen years—stalled his car. Before help arrived, Dr. Fritz delivered the baby himself—a 7-pound 2-ounce girl.

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DEALERS IN DEPENDABLE MERCHANDISE

It was announced on July 8 that Dr. Donald E. Pohl, formerly of Council Bluffs, Iowa, had become a member of the staff of the Crookston Clinic. A graduate of the University of Iowa in 1944, Dr. Pohl has been a resident in internal medicine at the University of Nebraska for the past two years.

* * *

Dr. J. S. Lewis began his practice at the Itasca Clinic in Nashwauk on July 1, replacing Dr. O. C. Braun, who had practiced there since 1941. Dr. Braun moved to Grand Rapids to be associated with the Itasca Clinic there. Dr. Lewis, a graduate of the University of Minnesota Medical School in 1948, served his internship at the University Hospitals.

* * *

Dr. Joseph N. Gehlen, Saint Paul, received his Fellowship certificate at the convocation of the American College of Chest Physicians in Atlantic City, June 2 to 5.

* * *

Dr. Robert A. Weyhrauch, a former resident of Wadena, joined the staff of the Alexandria Clinic on July 1. A graduate of the University of Minnesota Medical School in 1947, Dr. Weyhrauch recently completed a two-year internship at Swedish Hospital and General Hospital in Minneapolis.

HOSPITAL NEWS

Dr. Benjamin W. Mandelstam, Boston, has been appointed administrator of the new Mount Sinai Hospital in Minneapolis. Although the 200-bed, $3,500,000 hospital will not be ready to receive patients until the summer of 1950, Dr. Mandelstam will assume his new position this September. Between the time of his arrival and the opening of the hospital, he will oversee the final details of construction and direct the purchasing of equipment.

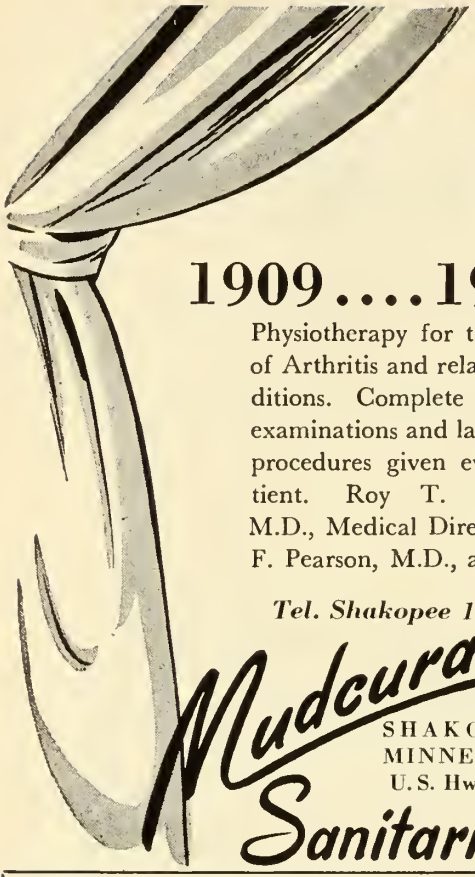
The new administrator for Mount Sinai Hospital has had extensive experience in hospital construction problems, as well as intensive training and experience in every phase of hospital administration. Dr. Mandelstam, a graduate of Tufts College Medical School, practiced medicine for six years and then became medical advisor of the Massachusetts Department of Public Welfare in 1940. Since then he has been assistant director of the Jewish Hospital of Brooklyn and assistant director of Beth Israel Hospital in Boston. Before being appointed to head Mount Sinai Hospital he was executive director of the Nathan Littauer Hospital in Gloversville, N. Y.

BLUE SHIELD NEWS

Up to June 30, 1949 Blue Shield has made payment on 11,423 cases in the total amount of $444,596.00. Payment was made for 2,322 cases during June, amounting to $89,648.59.

On August 1, 1949, the second change in the Minnesota Blue Shield contract was put into effect. This change was explained to the participating doctors of medicine by a letter in July. The change referred to is the increase of payments for emergency medical services in the hospital as distinguished from surgical care.

The Board of Directors approved the report of the Medical Advisory Committee to increase the payment



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to participating doctors of medicine for emergency medical cases in the hospital, as distinguished from surgical cases, to the amount of $8.00 for the first day, $5.00 for the second day, $4.00 for the third day, and $3.00 per day thereafter up to and including twenty-one days, and that for all other medical cases in the hospital which are not emergency medical cases they be continued at the present schedule of payments which is $5.00 for the first day and $3.00 per day thereafter up to and including twenty-one days. The Board of Directors further approved that such change in the payment to doctors schedule become effective August 1, 1949.

The Board of Directors realizes that there are certain hospitalized medical cases that in fairness to the patient and the medical profession, require a payment larger than that previously provided for in the schedule of payments. This improvement is intended to be applicable only to those cases of an emergency nature where the serious or critical condition of the patient is an increased responsibility and requires more time than the ordinary hospitalized medical case. The continuance of this improved schedule of payments will depend in part upon the fairness with which the medical profession bills these cases. Blue Shield, therefore, asks for the co-operation of physicians in making the charge only in those cases where there can be no question about the emergency nature of the case.

The question arises as to the distinction between an emergent and a non-emergent case. It will be necessary that the attending physician advise the Blue Shield office as to whether a hospitalized medical case should be classified as emergent or non-emergent, since the office personnel would not be able to make this determination.

As pointed out in the letter informing physicianss of the emergent medical service payments, the Blue Shield office wishes to ask continued co-operation in listing as emergent only those cases which correctly fall within that classification. Obviously, if routine cases were classified as emergency medical cases, payment would increase to such an extent that it might necessitate a return to the previous medical payment or an increase in premium on the Blue Shield contract. It is believed that all physicians will use caution and discretion in indicating hospitalized emergency cases when it is realized that this one phase of the change in the Blue Shield policy could be very costly and also very dangerous for the economic structure of the Plan. The Blue Shield Plan, of course, is in the hands of the physicians of Minnesota, and it is realized that they do not wish to see the Plan financially affected due to indiscriminate use of its various services.

The Medical Advisory Board is now giving further study to revisions of the whole schedule of payments to physicians where payments appear to be inequitable.

Minnesota Blue Shield is growing and is attempting to provide greater coverage and greater service to the people of Minnesota. With the continued co-operation of physicians, Blue Shield will constantly strive to improve the contract, not only from the standpoint of the public, but also from that of medical profession.

Blue Shield Begins Redeeming of Notes to Doctors

At a meeting of the Board of Directors on June 22,



1949, action was taken in regard to the redeeming of notes held by doctors of medicine who lent funds to the corporation for organizational purposes.

Action was taken to authorize the Treasurer to redeem up to an amount of $22,500 on a quarterly basis, subject to the financial condition of the corporation and with the approval of the Insurance Commissioner of Minnesota.

The first payments are being made in July in the amount of $22,500. The redemption of notes will be made by drawing of lots of such notes listed and unpaid on the records of Minnesota Medical Service, Inc.

The Insurance Commissioner has advised that the Board of Directors of Minnesota Medical Service, Inc., may redeem these notes at their wish, with the exception of $25,000 which in accordance with the Enabling Act is the amount required for working capital, and until the Insurance Department has had an opportunity to further examine the books and records of the corporation. Final redeeming of the $25,000 in notes will be made after approval of the Insurance Commissioner that such shall be repayable only out of surplus earnings of such corporation, after reserves for incurred claims, unearned subscribers' payments and a reasonable amount for contingencies have been provided.

Notes are being redeemed during the month of July in the amount of approximately $22,500 plus accrued interest at 4 per cent from July 1, 1948, to July 1, 1949, to those doctors who have lent funds to the corporation, on the basis of drawing by lot of such notes listed unpaid on the records of the corporation.

The Board of Directors of Minnesota Medical Service, Inc., is pleased to be able at this time to begin redeeming notes for these funds, and greatly appreciates the confidence and support the medical profession has given to the Blue Shield Plan. It is to be recalled that at the time Minnesota Medical Service Inc. sent out a request to the doctors to participate in lending funds for the working capital that the amount was oversubscribed, and never at any time was it necessary to use more than about $20,000 of the total $87,000 subscribed, and through a notice in MINNESOTA MEDICINE further contributions were terminated.

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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

THE VALUE OF HORMONES IN GENERAL PRACTICE. W. N. Kemp, M.D., Vancouver, British Columbia. 115 pages. Price $3.00, paper cover, spiral binding. Minneapolis: Burgess Publishing Co., 1949.

MANUAL OF MEDICAL EMERGENCIES. Stuart C. Cullen, M.D. Professor of Surgery, Chairman, Division of Anesthesiology, State University of Iowa College of Medicine, and E. G. Gross, M.D., Professor and Head of Department of Pharmacology, State University of Iowa College of Medicine. 267 pages. Illus. Price $3.75, cloth. Chicago: Year Book Publishers, Inc., 1949.

MANUAL OF HUMAN DISSECTION (Shearer's). Edited by Charles E. Tobin, Ph.D. Associate Professor of Anatomy, the University of Rochester School of Medicine and Dentistry. Second Edition. 286 pages. Illus. Price $4.50, cloth. Philadelphia: The Blakiston Co., 1949.

BLAKISTON'S NEW GOULD MEDICAL DICTIONARY. First edition. Edited by Harold Wellington Jones, M.D., Colonel, U. S. Army, Retired, Contributing Editor, *Encyclopedia Americana*, Former Director, Army Medical Library, Washington, D. C.; Normand L. Hoerr, M.D., Ph.D., Professor of Anatomy, School of Medicine, Western Reserve University; Arthur Osol, Ph.D., Professor of Chemistry, Director of Chemistry Departments, Philadelphia College of Pharmacy and Science, Editor-in-Chief, *United States Dispensatory*. With the assistance of an editorial board and over 80 contributors. 252 illus., 129 in color. 1294 pages. Price: Textbook edition, $8.50. Thin paper edition, $10.75. Deluxe edition, $13.50. Philadelphia: The Blakiston Co., 1949.

This completely new medical dictionary should be welcomed by every physician, dentist and medical student who can read the English language.

Described by the publishers as the first new medical dictionary in thirty-eight years, the volume bears no resemblance to the customary revised editions of dictionaries which have been offered on the market every few years in the past.

Gone are definitions of such non-scientific and non-descriptive terms as Bright's disease and Buerger's disease. Instead, under "Bright, Richard" and "Buerger, Leo" there are thumbnail biographies, with references to chronic nephritis ("which received the name *Bright's disease*") and thromboangiitis obliterans, respectively. The definitions of the diseases are found, properly, under their scientific names.

Hundreds of new words, carefully analyzed and defined, are included, making the volume as up to date as possible. A system of modern phonetic respelling is combined with syllabification to indicate correct pronunciation. An atlas, with color and black-and-white illustrations covering anatomy, dentition, malaria parasites, bandaging, fractures and numerous other subjects, is bound into the center of the book. Tables describing blood constituents, diets, anatomic systems, hormones, anomalies, phobias, veterinary doses and other subjects are grouped for easy reference in a special section. The extensive vocabulary covers all branches of medicine and allied sciences—medical physics and chemistry, dentistry, pharmacy, nursing, biology, botany, et cetera—including medicolegal terminology.

The book is nicely bound, and its contents are set in easily readable type, with all defined words standing out clearly in boldface letters.

The dictionary was compiled by three well-known scientists with the co-operation of an editorial board and more than eighty capable contributors. The book is a notable achievement, and it should be of great use to anyone associated in any way with the medical profession.

J. H. L.

TRANSACTIONS OF THE THIRD AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY, Septemher 8-12, 1947. 412 p. Illus. Price $9.00. Portland, Oregon: Western Journal of Surgery Publishing Co., 1948.

The Proceedings as published in this volume present an excellent refresher course for anyone who feels the need of one.

There is a symposium on sterility, round-table discussions on asphyxia in the newborn, prolonged labor, uterine myomas, early ambulation in obstetrics, etiology of abortions, and the data on the study of 2850 Rh determinations.

Other presentations were on the various types of anesthesia and analgesia used in obstetrics, cancer of the cervix and its treatment, pregnancy complicated by heart disease, tuberculosis and diabetes, different types of cesarean sections and their merits, thyroid therapy and nutrition in pregnancy.

All of these subjects were presented by recognized authorities. This volume serves as an excellent review of up-to-date methods and opinions.

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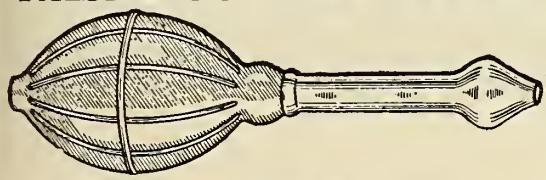
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*Cecil, R. A.: A Textbook of Medicine. Philadelphia, W. B. Saunders Co., 1947, p. 376.

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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 32 **September, 1949** **No. 9**

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† Wilkerson, H. L. C. and Krall, L. P.: Diabetes in a New England Town, Journal of the American Medical Association, *135*:209 (Sept. 27) 1947.

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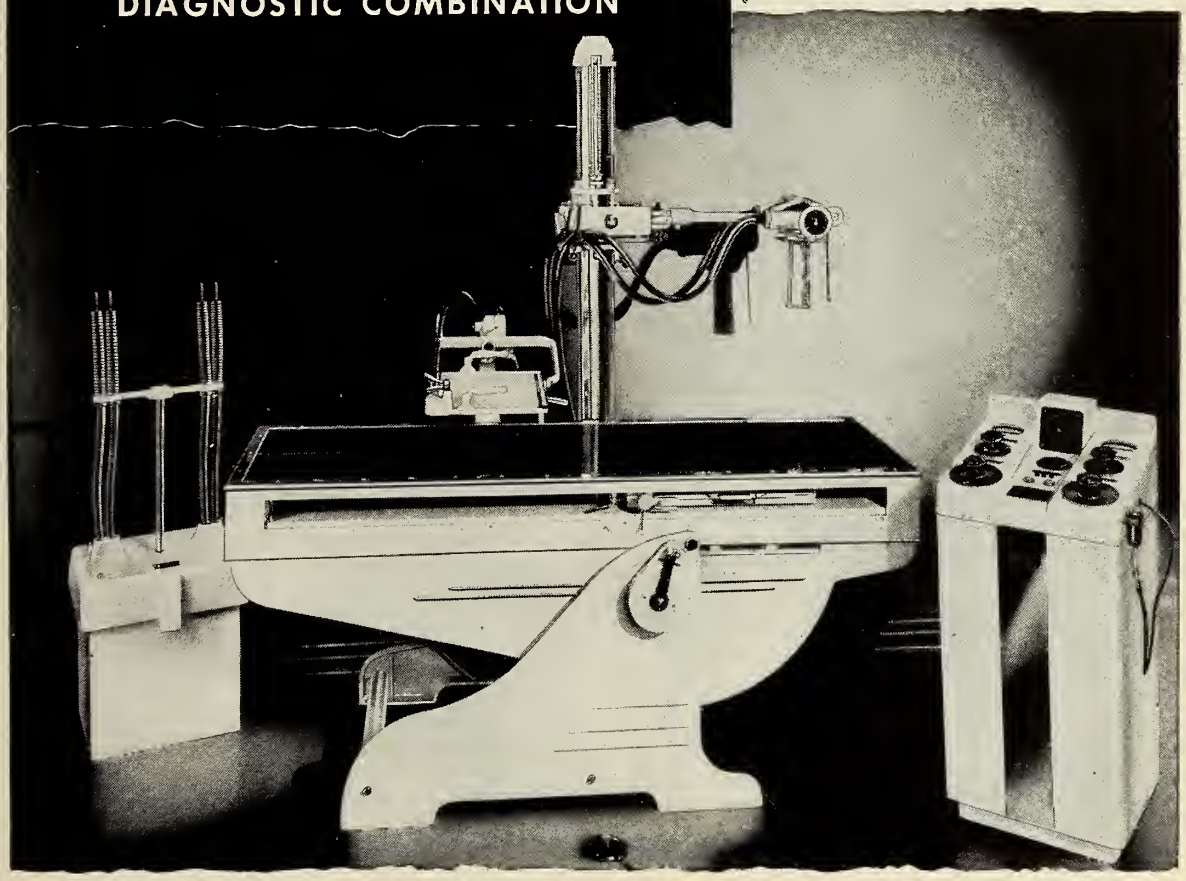
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(1) Harrell, R. F.: J. Nutrition 31:283 (Mar.) 1946.
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(10) Joslin, C. L., and Helms, S. T.: Arch. Pediat. 54: 547 (Sept.) 1937.

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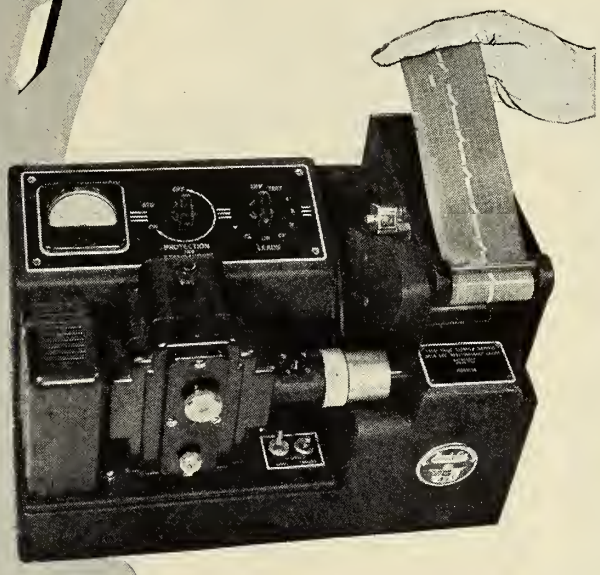
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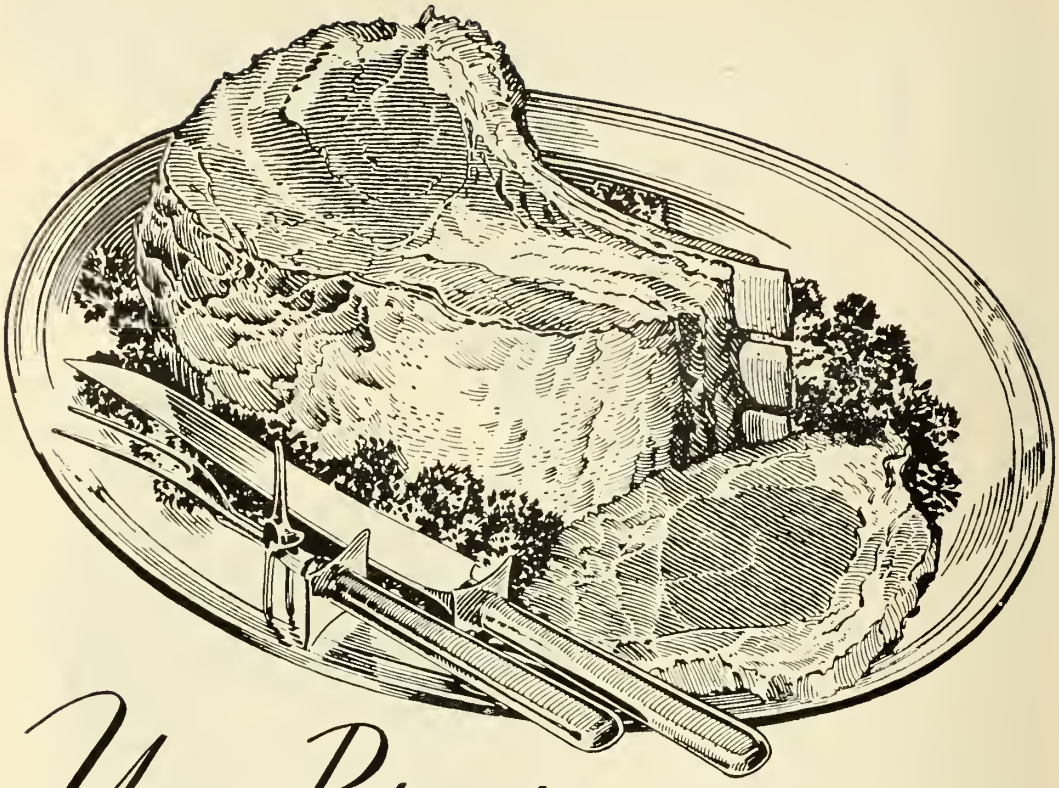
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*McLester, J. S.: Protein Comes Into Its Own, J.A.M.A. *139*:897 (April 2) 1949.

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1. Brewster, J. M., U. S. Naval Med. Bull. **49**: 1-11, January-February 1949.

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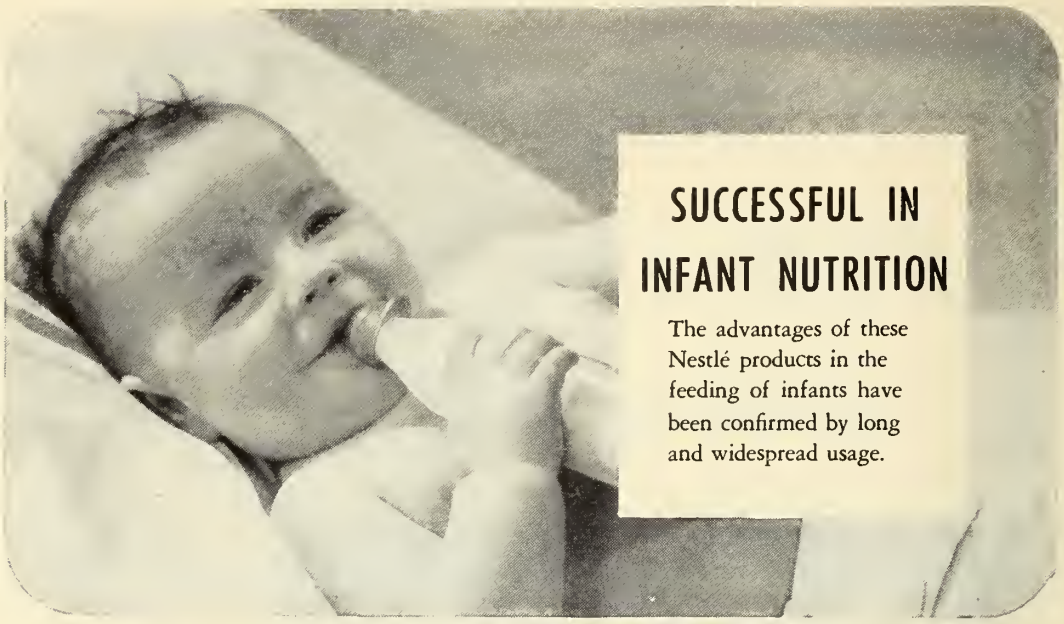
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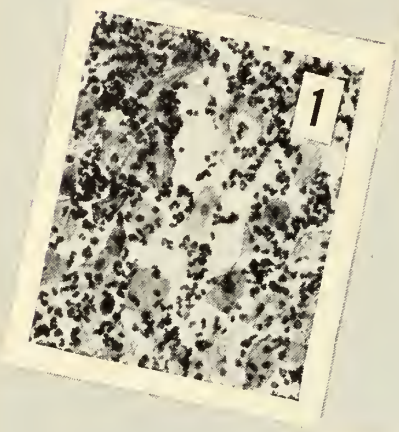
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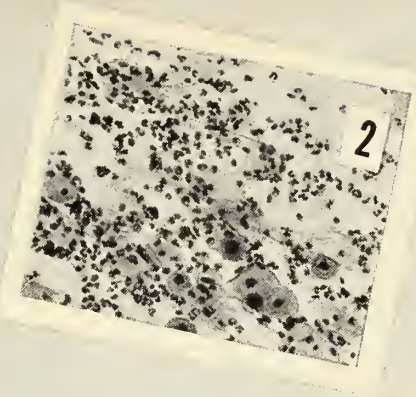
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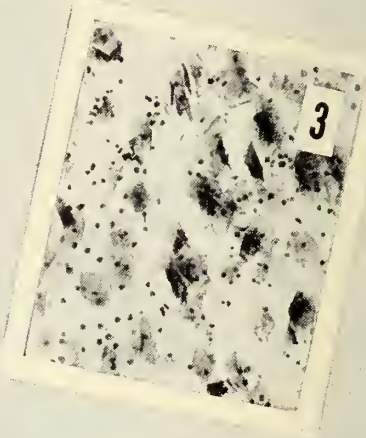
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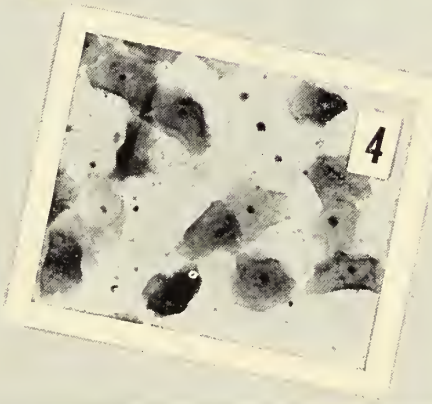


Untreated menopause. Epithelial cells are relatively small, large nuclei predominate; bacteria, leukocytes, free-floating nuclei and other debris cloud the smear picture. **1**



2 & 3 Smears showing progressive improvement during estrogen treatment. The picture is beginning to clear. The cells are enlarging and becoming more discrete.





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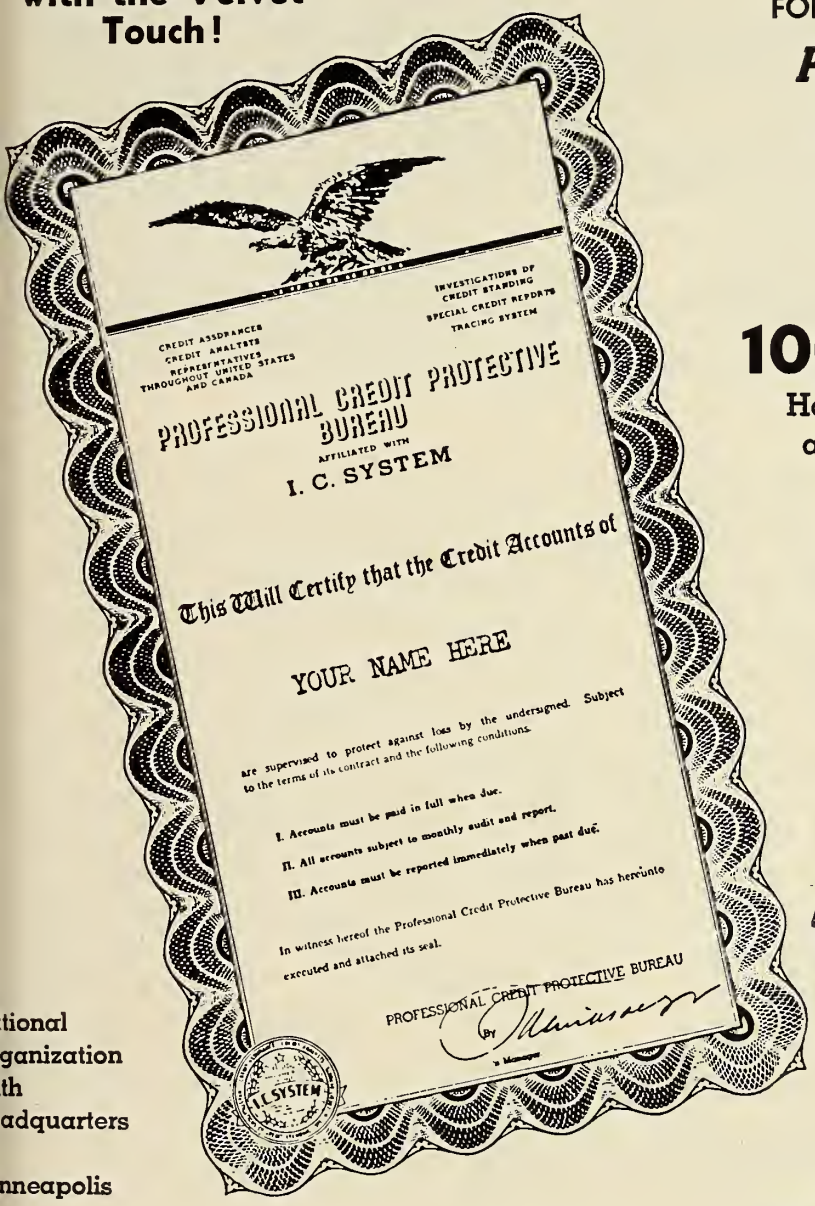
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RECENT ADVANCES IN PERNICIOUS ANEMIA, THE HYPOCHROMIC ANEMIAS AND THE HEMOLYTIC ANEMIAS

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IN THIS paper the recent advances in pernicious anemia, the hypochromic anemias and the hemolytic anemias will be discussed. Due to space limitations, the discussion will necessarily be brief.

Pernicious Anemia

In the twenty-three years which have elapsed since Minot and Murphy announced their discovery of the value of liver in the treatment of pernicious anemia, there has been an unremitting search for the substance in liver which makes it efficacious. Beginning with Cohn's successful preparation of a liver extract in 1927, repeated efforts were made to further purify and concentrate the effective material, with the result that for a number of years we have had available a number of relatively refined, stable, liver extracts. These extracts have been eminently satisfactory in the treatment of pernicious anemia. Administered properly, they have maintained normal blood levels, have prevented or improved the neurologic complications and, in general, have permitted the patient with pernicious anemia to live out a normal life expectancy.

However, there have been certain problems. For example, occasional patients have developed anaphylactic reactions to these materials. More important, however, was the disturbing fact that certain anemias which seemed morphologically identical with pernicious anemia were more or less refractory to these refined liver extracts. These entities, namely, sprue, pernicious anemia of pregnancy, pernicious anemia of infancy, tropical or nutritional macrocytic anemia, and so-called "achrestic" or "refractory" megaloblastic anemia, nearly always presented the megaloblastic bone marrow and the macrocytic anemia so characteristic of pernicious anemia. Yet the same liver extract which produced such rapid maturation of immature cells in the pernicious anemia marrow frequently failed in these similar conditions, whereas crude liver preparations, especially by mouth, often produced satisfactory results. The partial solution of this enigma has been an achievement of the past three years.

In 1945, following a series of apparently unrelated experiments in animals by other workers, Spies and Vilter and their associates announced that folic acid, a member of the Vitamin B complex, was highly effective in pernicious anemia. In rapid succession, this was followed by a number of equally electrifying reports. Sprue, both tropical and nontropical, was found to respond to folic acid in spectacular fashion, in nearly all instances. Pernicious anemia of pregnancy, the megaloblastic anemia of infancy, and the nutritional macrocytic anemias were likewise found to respond sharply to minute doses of this material. Folic acid appeared to be a discovery of the first magnitude, and an editorial in the journal *Blood* in 1946, called it "the wonder drug of the year."

It was puzzling, however, to learn that refined liver extract contained only traces of folic acid,

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quite insufficient to account for its potency in pernicious anemia. Similarly, it was disturbing to find that many cases of pernicious anemia treated with folic acid exhibited sub-optimal reticulocyte responses. But the crushing blow came late in 1947, when the first reports appeared concerning neurologic relapse in pernicious anemia patients treated with folic acid. It soon became obvious that folic acid, or pteroylglutamic acid, as it was then renamed, not only failed to prevent neurologic complications but seemed actually to encourage them, possibly because of interference with normal utilization of glutemic acid by nerve tissue. In any event, it was obvious that pteroylglutamic acid could not replace liver extract in the treatment of pernicious anemia, valuable though it was in the treatment of related states.

In spite of this disappointment the search went on, using various lactobacilli as experimental animals, and it was only a few months later that vitamin B_{12} was discovered by Short, isolated by Rickes, and proven by West to have almost unbelievable potency in the treatment of pernicious anemia. As Dameshek has said, "Here is a substance that, when given to a patient with pernicious anemia, results in a maximum reticulocyte response and a near maximal erythrocyte response following a *single* injection of 5 to 10 thousandths of a milligram. Has there ever been in the history of medicine a more potent material, microgram for microgram?" Nor is this all. Unlike pteroylglutamic acid, vitamin B_{12} has been shown to be equally potent in the relief not only of the neurologic complications, but of the mucous membrane lesions as well. In other words, at this time "vitamin B_{12} appears to be the long-awaited liver extract factor," normally formed by the interaction of extrinsic and intrinsic factors. Furthermore, these discoveries permit us, as Dameshek has pointed out, to make at least a tentative classification of the megaloblastic anemias, based on etiology. Thus it appears at the present time that Addisonian pernicious anemia and a few cases of sprue are exampled of "pure" vitamin B_{12} deficiency, whereas most cases of sprue, tropical macrocytic anemias, nutritional macrocytic anemias, so-called "refractory" megaloblastic anemias, pernicious anemia of pregnancy, and megaloblastic anemias of infancy represent deficiencies of folic acid.

It is obvious that there are still many gaps in our knowledge regarding the causes of the deficiencies themselves, but at least we now have a working basis for the treatment of what has previously been a most difficult group of diseases.

In addition to these fundamental discoveries, there is one further point regarding the management of the case of pernicious anemia which cannot be emphasized too strongly. It has been suspected for a long time that atrophic gastritis and achlorhydria may be precursors of two diseases with which they are notably associated, namely, pernicious anemia and carcinoma of the stomach. It has remained for recent statistical investigations, notably those of Rigler and his associates, to prove the melancholy fact that pernicious anemia is the blood-brother of gastric cancer. The incidence of stomach cancer in the pernicious anemia patient is at least four or five times as great as in other individuals in the same age group, and may well reach 15 per cent. The importance of this is clear. The treacherous silence of carcinoma of the stomach is well known, and one cannot wait for symptoms in the patient with pernicious anemia before advising x-ray examination. The patient with pernicious anemia must be *routinely* subjected to gastrointestinal x-ray examination, preferably every six months. There can be no compromise with this program, any more than one can compromise with the routine examination of the blood and the routine administration of specific therapy in these patients.

The Hypochromic Anemias

Recent studies in the field of the hypochromic anemias have been mainly concerned with fundamental observations regarding iron metabolism, rather than with clinical problems, but these investigations, often involving the use of radioactive iron, have been experimental proof of our general concepts of iron deficiency. Thus, the use of these tracer materials has proven conclusively that four to five times as much iron is absorbed in human beings when it is administered in the ferrous form as opposed to the ferric. The effect of achlorhydria in reducing absorption of iron from food, the depressing effect of alkalis on iron absorption, and the unimportance of such materials as copper and molybdenum in clinical iron deficiency have been re-emphasized.

There is still no evidence that iron ever needs to be administered parenterally, and there is likewise no evidence that any combination of iron with liver, with vitamins, or with folic acid is of

any advantage in the treatment of hypochromic anemia.

In this connection, it is well to remember that the great majority of anemias failing to respond to specific therapy fall into one of five categories: (1) unsuspected blood loss; (2) the anemias of chronic infection, particularly infections in the genito-urinary tract, the lung, the bones and joints, and in the blood stream; (3) the anemia of chronic renal insufficiency; (4) the myelophthisic anemias, due to throttling of the marrow by leukemia, by Hodgkin's disease, or by cancer; and (5) the hemolytic anemias. Failure of a normochromic or hypochromic anemia to respond to iron should immediately direct attention to these categories.

The Hemolytic Anemias

The hemolytic anemias, in spite of their comparative rarity, have received increasing attention in recent years from both diagnostic and therapeutic points of view. Thus, the introduction by Watson of quantitative methods for the determination of urobilinogen in feces has been of value not only in the differential diagnosis of jaundice but in proving beyond question the existence of a hemolytic process. Sharp increases in fecal urobilinogen may be, in fact, the only evidence that an obscure anemia is a hemolytic one. In most instances, however, the simultaneous presence of anemia, acholuric jaundice, and reticulocytosis, with or without splenomegaly, are the signs which lead to the proper diagnosis. Among other diagnostic aids one may mention the presence of spherocytes, particularly in familial hemolytic jaundice, target cells in Mediterranean anemia, and sickle cells in African hemolytic anemia.

With regard to specific hemolytic syndromes, there are several about which interest has centered in recent years. For example, paroxysmal cold hemoglobinuria was formerly thought to be almost exclusively a complication of syphilis. It is now known, however, that it may also appear simultaneously with the appearance of cold agglutinins. Since these antibodies occur with great regularity after viral pneumonia, it is evident that one must be on the lookout for the occasional appearance of the hemolytic syndrome. The first symptom is frequently the appearance of Raynaud's phenomenon in the extremities, and the literature records at least one instance where the extreme pallor of a foot in this connection was mistaken for an acute arterial thrombosis, following which the foot was packed in ice. Gangrene developed a few hours later, the syndrome was then recognized, and the foot fortunately saved.

The whole complex subject of erythroblastosis fetalis and Rh is likewise included under the heading of the hemolytic anemias. The immunohematologist is the only one who can discuss the ramifications of Rh, and the pediatrician is quite properly charged with the responsibility for the care of the erythroblastotic infant. I should like to point out, however, the potentialities of Rh haptene in the prevention of erythroblastosis. From the early reports, it would appear that the administration of this partial antigen to the Rh-negative mother during the latter part of pregnancy can be very effective in the prevention of erythroblastosis in the Rh-positive child.

From the internist's point of view, perhaps the most interesting and significant development in this field has been the extension of the concept of hypersplenism. The functions of the spleen are still mysterious, but it has become increasingly clear that its unexplained overactivity is the common denominator of a number of hematologic diseases. It has been known for a long time that splenectomy was of great value in congenital hemolytic jaundice, and for a shorter period its value in true thrombocytopenic purpura has been recognized. Similarly, primary splenic neutropenia has been found to respond to excision of the spleen. Of the so-called "idiopathic" acquired hemolytic anemias, some 60 per cent have been found to respond favorably to splenectomy. Most interesting is the concept of "symptomatic" hypersplenism. In this condition, which may be a feature of any disease in which splenomegaly is normally found, the enlarged spleen may be responsible for the abnormally low level of any blood element. Most commonly this is the red blood cell, and thus the syndrome of "symptomatic" hemolytic anemia may be found in such diverse diseases as leukemia, carcinomatosis, Hodgkin's disease, and cirrhosis of the liver. I have even observed thrombocytopenic purpura with such relatively benign lesions as sarcoidosis of the spleen. The importance of the recognition of this process is self-evident, since the removal of the spleen may permit even those individuals with serious underlying disease to extend their useful lives by several years. For example, a patient

(Continued on Page 940)

LEUKEMIA, LYMPHOBLASTOMA AND POLYCYTHEMIA VERA

LOUIS R. LIMARZI, M.D.
Chicago, Illinois

LEUKEMIA has been known for over 100 years; still the nature and etiology of the disease are unknown. There is no cure for leukemia, and the therapeutic agents used in the disease are palliative in their effect. Patients with leukemia are made more comfortable by treatment despite the fact that it may not prolong life materially. In general, the indications for treatment in the chronic forms of myeloid and lymphatic leukemia are the appearance of signs and symptoms of anemia, hemorrhagic manifestations, pressure effects from an enlarged spleen or from enlarged lymph nodes or evidence of leukemic infiltrations in other organs.

Chemotherapy.—Arsenic in the form of potassium arsenite has been used in the treatment of chronic myeloid leukemia for many years. Arsenic administered by mouth over a long period of time has been followed by a gradual return of the leukocyte count to normal, associated with a rise in the hemoglobin and red blood cell count. The blood platelets are not depressed, and arsenic may be used in the leukopenic phase of the disease. The splenomegaly decreases, and the patient may appear clinically well. The initial dose is 3 to 5 minims of Fowler's solution in orange juice or milk, given three times daily after meals. After several days the dose is increased by 1 minim daily to the point of tolerance or the point at which the leukocyte count is normal. The serious objection to the use of Fowler's solution is development of toxic symptoms, namely, loss of appetite, nausea, vomiting, diarrhea, dermatitis, neuritis and renal irritation. The drug eventually has to be stopped in all cases, and this is usually because of its effect on the skin. Satisfactory remissions of from three to eighteen months have been maintained with Fowler's solution.

Urethane (ethyl carbamate) as a therapeutic agent in the treatment of leukemia was first reported by Paterson, Thomas and Haddow in 1946. In selected cases of chronic myeloid leukemia, urethane will produce a rapid fall in the white blood cell count and a nearly normal blood pattern. The dose is from 1.0 to 5.0 gm. daily administered by mouth (7½ grain tablets or 5 grain enteric-coated tablets). It may also be administered parenterally, although the intravenous route is not without danger. Remissions in chronic myeloid leukemia may be maintained with urethane as long as a proper dose is given. If the drug is stopped or if the dose is decreased, the leukocyte count steadily and rapidly rises, only to drop again with institution of adequate urethane therapy. The red blood cell count and hemoglobin values are improved during this treatment. The enlarged spleen decreases in size, but in our experience it never receded to its normal size. It is our impression, from a study of approximately 100 cases of leukemia, that some patients are made chronically sick while on urethane therapy in spite of the decrease in the leukocyte count and the recession in the size of the spleen and lymph nodes. Some patients experience anorexia, marked nausea and vomiting, or may show toxic symptoms in the form of anemia, agranulocytosis and thrombocytopenia. The drug may aggravate the gastrointestinal bleeding in cases of chronic myeloid leukemia. Urethane is generally more effective in chronic myeloid leukemia, although a reduction of the leukocytes to normal with a decrease in the size of the lymph nodes is frequently observed in chronic lymphatic leukemia. Acute leukemia is not benefited by the drug, although a temporary remission was induced in two of our cases. There is no evidence from our series of cases of leukemia that urethane prolongs the life expectancy of patients with the disease.

Nitrogen Mustards.—The application of these groups of compounds in the treatment of leukemia, Hodgkin's disease and other lymphomas has been evolved from their marked cytotoxic effects. The dose of nitrogen mustard is usually 0.1 mg. per kilogram of body weight given intravenously daily for four to six days. Because of the rapid hydrolysis, the solution is freshly made by dissolving 10 milligrams of the drug in 10 c.c. of sterile isotonic solution of sodium chloride. The calculated dose is then immediately injected into

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the rubber tubing during the course of an intravenous infusion of saline solution in order to avoid its contact with the patient's subcutaneous tissue or skin. Thrombophlebitis may also occur. Because of the toxic action of nitrogen mustard on the hemopoietic tissues, a complete blood count including a platelet count should be performed daily during the course of the treatment. Nausea and vomiting, often severe, are common in many cases one to three hours after the administration of the drug. Repeated remissions of six and twelve months have been obtained in several cases of chronic myeloid leukemia. Somewhat better results have been obtained in the treatment of chronic lymphatic leukemia. Practically all the patients treated have responded to the initial course of the drug with remissions which lasted from two to twenty-one months. Nitrogen mustards are of little or no value in acute leukemia. In general, nitrogen mustards are not superior to roentgen rays in the treatment of leukemia, although occasionally they are useful in radioresistant patients.

Folic Acid Antagonists.—These drugs were first used by Farber and his associates in February, 1947. The folic acid antagonists (aminopterin, a-methopterin and amino-an-fol) have produced temporary remissions in only about 50 per cent of acute leukemias in children. The dosage schedule usually employed in our cases of acute leukemia in children is 1 mg. of aminopterin intramuscularly daily for three to four days, followed by 0.5 mg. daily until there is conversion from a "blast" type of bone marrow to a normal pattern or nearly so. An attempt is then made to maintain a normal blood and bone marrow by the oral or intramuscular administration of 2 to 5 mg. of methopterin daily. In a series of ten cases of acute leukemias in children, five have died; the remainder have been maintained in a state of remission varying from four to eleven months. Aminopterin is a very potent and toxic folic acid inhibitor. Toxic effects noted in our patients include severe leukopenia, severe depression and aplasia of the bone marrow associated with a severe anemia, leukopenia and thrombocytopenia in the peripheral blood, rectal bleeding, hematemesis, ulceration of the mucous membranes of the oral cavity and anus, loss of hair and hemorrhagic infiltration of the skin. The bone marrow changes may be rapid, profound and irreversible. Fatalities have occurred for this reason. The margin of safety between a toxic reaction and death is at times very small. This is especially true in acute leukemia in adults. There is no evidence that folic acid antagonists cure leukemia. The use of the drug in chronic leukemia is limited by the early development of toxic phenomena.

Roentgen Ray Therapy.—For many years, since 1903, roentgen irradiation has been the most generally employed as well as the most successful treatment for chronic leukemia. The reduction in size of large glandular masses or an enlarged spleen improves the general physical condition of the patient. An elevated white cell count in itself is not an indication for irradiation. It is doubtful whether there is any advantage in treating those patients who are symptomless.

In spite of the fact that for many years roentgen therapy has been the method of choice, there is considerable controversy as to the type of treatment to be used. Some radiologists prefer local treatment to the spleen, enlarged lymph nodes and the long bones. Recently the use of small doses of x-rays to the whole body has proved successful in treatment of chronic leukemia. Reactions are less likely to occur with the "spray" technique. Total irradiation is not very effective in reducing a greatly enlarged spleen or marked adenopathy. In many instances the technique used will depend on the facilities available. During the first series of treatments it is wise to proceed cautiously, since there is considerable difference in the reactivity of patients to irradiation. Treatments can be given daily, two or three times weekly or less frequently. The white blood count and differential blood smear serve as a partial guide to the intensity and frequency of roentgen-ray exposure. It is generally agreed that the improvement is manifested by reduction in size of the spleen or lymph nodes and increased red blood cell count.

Symptoms of irradiation sickness include anorexia, nausea, vomiting and diarrhea. This reaction is more likely to occur when the upper abdomen has been treated. The intensity of the systemic reaction depends on the area of body surface treated, the portion of the body exposed and the dosage.

Radioactive Phosphorous.—In chronic myelogenous leukemia, P^{32} is effective in producing clinical and hematologic remission. Following

the use of P^{32} the leukocyte count decreases and the percentage of myeloblasts and myelocytes diminishes. The erythrocyte level increases in most cases. Clinically, asymptomatic improvement is noted with reduction in size of the spleen and lymph nodes. Because of the wide variation in the dosage of radioactive material required to restore the leukocyte count to near normal values, a rigid schedule of treatment is not feasible. However, it has been recommended that 1 to 2 millicuries be administered intravenously on the first day and 0.5 to 1 millicuries on the third, sixth, tenth and fourteenth days. In patients with a high leukocyte count, it may be necessary to administer from 0.5 to 1.0 millicuries at weekly intervals until the white cells number approximately 30,000 per cubic millimeter. The use of large and concentrated doses may result in depression of erythropoiesis and platelet formation. Treatment with P^{32} does not produce radiation sickness or other subjective disturbances. In a series of patients with myeloid leukemia treated with P^{32}, Hall and Watkins have noted that in six of fifteen cases the terminal blood picture was that of acute leukemia. The possibility of radioactive phosphorous as a precipitating cause of an acute phase must be considered.

It has been demonstrated that chronic lymphatic leukemia does not respond as favorably to therapy with P^{32} as the myeloid form of the disease. Smaller doses of P^{32} are required to reduce the total leukocyte count in lymphatic leukemia.

General measures employed in the treatment of chronic leukemia include rest and an adequate diet. Restriction of activity is not necessary if weakness is not pronounced and the temperature is not elevated. Many of these patients are able to lead active and useful lives for many years. A high caloric diet, adequate in protein, is recommended. If the diet is well balanced, the need for supplementary vitamins is not great.

Blood Transfusions.—Occasionally blood transfusions are required to correct the progressive anemia which develops during the course of the chronic leukemias. Since liver and iron are not effective in improving the anemia of leukemia, it is necessary to use whole blood when there is excessive weakness, restlessness, dyspnea and hemorrhagic tendencies. Symptomatic improvement may follow transfusions especially when the erythrocyte count is below 2,000,000 and the hemoglobin under 6 grams per 100 c.c. It may be necessary to give three or more transfusions (500 c.c.) to obtain the desired results.

Acute Leukemias

The treatment of acute leukemia with the folic acid antagonist has already been discussed. The course in most cases of acute leukemia is rapid, progressively downward, and usually fatal within three months. The treatment is essentially symptomatic with an attempt to make the patient comfortable. Because of the associated hemorrhagic tendencies, whole blood transfusions are of distinct value. Penicillin may be employed in controlling the secondary infection which is likely to accompany the ulcerative lesions in the oral cavity.

Lymphoblastoma

This group of diseases, the cause and nature of which are still unknown, include Hodgkin's disease, lymphosarcoma, reticulum cell sarcoma, lymphatic leukemia and mycosis fungoides. The treatment of lymphatic leukemia has been previously discussed. Satisfactory treatment for the lymphomas has not been found. For localized lesions in Hodgkin's disease, roentgen irradiation is the treatment of choice. There is general agreement that for patients with disseminated lesions the use of nitrogen mustard therapy with roentgen irradiation of selected specific areas appears to be the most effective method. According to some observers, when a patient is first seen presenting only one group of nodes involved, better results are secured if that group is resected and roentgen irradiation is given to the area postoperatively and also to other nodes in the adjacent regions.

The usual course of Hodgkin's disease, well managed by irradiation, is three to five years. In some instances it is shorter, while in the occasional case, palliation may be obtained for ten years or even longer. There comes a time when irradiation no longer causes regression of nodes and improvement in general condition. In the past general deterioration and eventually fatality ensued in these patients. Nitrogen mustard, which appears to act similarly to roentgen therapy, has proven of great value in some of these cases. An occasional patient with Hodgkin's disease may again become sensitive to roentgen ray treatment following nitrogen mustard therapy. Nitrogen mustard is also recommended for patients with Hodgkin's

disease in whom intensive roentgen ray therapy must be directed to the mediastinum, with consequent development of fibrosis of the lungs. This, of course, may be avoided by means of nitrogen mustard therapy. In general, the use of nitrogen mustard in Hodgkin's disease is indicated (1) when the lesions are generalized, (2) when the lesions, whether localized or generalized, are resistant to x-ray, and (3) in the presence of generalized symptoms such as fever, itching and neurological manifestations which are particularly amenable to chemotherapy.

Lymphosarcoma is best treated with roentgen rays. The response of giant follicular lymphoma to moderate doses of x-ray irradiation may be remarkable. All evidence of the disease may disappear and the patient may remain well for years. Craver believes that most of these cases, sooner or later, convert to reticulum cell sarcoma, becoming also less radiosensitive and more aggressive. The effect of nitrogen mustard in cases of generalized lymphosarcoma has been rather disappointing. Radioactive phosphorus, given intravenously in this disease as well as Hodgkin's disease, has produced disappointing results.

Mycosis fungoides has been treated with both roentgen rays and nitrogen mustard without any remarkable effect on the final course of the disease.

Polycythemia Vera

Radioactive phosphorous is perhaps the most effective means of treating polycythemia vera and producing prolonged remissions in this disease. This material has the advantage of never producing nausea or vomiting or any other ill effects when administered in therapeutic doses. Radioactive phosphorous emits a beta ray, has a half life of 14.3 days and localizes in a large measure in bone marrow and blood forming tissue. Radioactive phosphorous is usually administered as sodium acid phosphate and preferably intravenously since this eliminates the uncertainty of gastrointestinal absorption. From 3.5 to 7 millicuries is given initially. If at the end of from three to six months a hematologic and symptomatic remission has not been produced, a dose comparable to the initial dose or a fraction of it is given. When the symptoms are severe or the red blood cell count is so high that complications of thrombosis are feared, 500 c.c. of blood are removed every other day until the hematocrit value has been reduced to approximately 40 per cent. Complete symptomatic and hematologic remissions of from six months to more than five years may be produced by this form of treatment. The complications of P^{32} are largely confined to severe leukopenia, thrombocytopenia and anemia resulting from overdosage or unusual sensitivity of the patient. It is well known that chronic leukemia, especially the myeloid type, occurs in about 10 per cent of all cases of polycythemia even though no irradiation or P^{32} is given. On the other hand, following P^{32} treatment, several patients with polycythemia vera have been reported terminating with acute leukemia.

The nitrogen mustards produced hematologic and symptomatic remissions of from six months to two and a half years. A dose of 0.1 mg. per kilogram given on four consecutive days may produce symptomatic relief within three weeks after treatment. Hematologic values are within normal limits in some cases by two months after treatment. The toxic reactions that may result from the administration of the nitrogen mustards are nausea, vomiting, leukopenia and thrombocytopenia. The nitrogen mustards have the advantage of easy administration and do not require any elaborate set-up. On the other hand, the use of P^{32} is limited to certain medical and research centers, entails special equipment and precautionary measures which are too expensive or not feasible for most hospitals. Irradiation has been used in the treatment of this disease for many years. Spray irradiation, total irradiation or treatment of the entire body has been introduced in more recent years and is now regarded as effective and well tolerated. Remissions of from six months to five years have been reported by the method of total body irradiation.

The use of arsenic (Fowler's solution) is a safe and reliable method of treating polycythemia. The serious objection to the use of Fowler's solution in polycythemia vera is, namely, the loss of appetite, nausea, and vomiting which so commonly occurs. This is usually followed by loss of weight and disagreeable gastrointestinal symptoms which cause the patient to turn against the drug.

ANESTHESIA FOR THORACIC PROCEDURES

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THROUGHOUT the history of medicine, medical endeavor has often been retarded through the lack of progress along one line. This has been particularly true of thoracic surgery. Prior to the advent of modern anesthesiology, thoracic procedures were largely confined to extrapleural operations and those procedures which could be carried out rapidly.

Within the last fifteen years anesthesiology has come into its just place in the field of medicine. New agents have been discovered, new methods of administration have been devised, and new techniques have been perfected for the administration of some of our older and better known anesthetic agents.

It is generally recognized that endotracheal anesthesia[4] has done much to promote successful thoracic surgery. By using this technique the anesthesiologist has complete control at all times. The collapsed lung may be inflated at will. Secretions may be satisfactorily removed by suctioning through the endotracheal tube. The apneic technique may be carried on at will, and a patent airway is always assured.

Adequate preoperative and postoperative care of the patient, the proper mainteance of blood and fluid levels, the introduction of the antibiotics and improvements in diagnosis and surgical techniques have placed thoracic surgery on the high plane it now occupies.

The successful conduction of anesthesia for the patient who is undergoing a thoracic surgical procedure frequently challenges the skill and judgment of the anesthesiologist. Thoracic operations are usually performed upon anemic, poor-risk patients with altered vital capacities and upon those suffering from pulmonary neoplasms, congenital cardiac anomalies, intrapleural tumors, and debilitating diseases such as tuberculosis, bronchiectasis and abscess. These preoperative conditions predispose to anoxia, circulatory disturbances and shock.

In excisional surgery of the lung and intrapleural tumors, and also for operations upon the heart, mediastinum and esophagus, the patient is subjected to the dangers of an open pneumothorax, untoward vagal reflex stimuli, cardiac arrythmias, and the dangers of suffocation from bronchial secretions, blood, and pus expressed from the already diseased lung during operation. The anesthesiologist must be adequately equipped to combat these conditions to insure a satisfactory course for the patient.

Patients with an open pneumothorax will usually maintain adequate respiratory exchange through the one intact lung. However, if respiratory exchange is inadequate, the respiratory movements must be supplemented by intermittent pressure upon the breathing bag on the gas machine. It is not advisable to leave the exposed lung collapsed for long periods of time because the atelectatic condition of the lung may be difficult to correct unless the lung is expanded periodically. Positive pressure up to 10 mm. mercury applied every twenty or thirty minutes will effectively correct the atelectatic condition.

Reflex stimuli which are at times instituted during a thoracic procedure may be the cause of death during an operation. There are several precautionary measures that can be taken to prevent these reflexes. Adequate premdication with atropine will depress the vagal reflex. It has been shown[3] that procaine will reduce the irritibility of the myocardium and increases the threshold of stimuli necessary to produce fibrillation. The vagus nerve around the hilus of the lung may be injected with 1 per cent procaine. This effectively blocks vagal impulses and reduces the dangers of instituting a vago-vagal reflex which may lead to cardiac arrythmias and death. Procaine may be administered intravenously to correct these cardiac irregularities. Ten cubic centimeters of a 1 per cent solution will frequently correct untoward cardiac stimuli and restore a normal rhythm. Some authorities[2] administer procaine solution intravenously throughout the operation as a prophylactic measure. Sixty to 100 drops per minute of a 1 per cent solution will effectively control many of the dangerous reflex stimuli.

Execessive pulmonary secretion is frequently one of the most dangerous complications. This is especially true in patients suffering from tuberculosis, bronchiectasis, or lung abscess. Adequate

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preoperative medication will lessen normal secretions. However, other measures must be instituted to control purulent secretions. Prolonged postural drainage preoperatively may be of advantage. Preoperative and postoperative suction bronchoscopy is one of the most effective means of controlling excessive secretions. During operation, secretions may be removed by passing the suction catheter through the endotracheal tube.

Selective endobronchial anesthesia has been used with some success. By employing this technique the infected lobes may be locked off, thus decreasing the danger of hypoxia.

There has been considerable controversy as to the best type of anesthesia for thoracic surgery. General anesthesia is favored by some surgeons, while others prefer spinal or local anesthesia. The advocates of the latter type of anesthesia feel that the conscious patient is better able to keep the bronchial tree free of secretions through an active cough reflex. However, there are disadvantages to this type of anesthesia. The patients will become restless and uncomfortable if forced to lie in one position for long periods of time unless heavily sedated. The heavy sedation will partially obliterate the cough reflex and thus defeat the purpose of regional anesthesia. Local anesthesia is most effective for thoracoplastics and extrapleural procedures.

A general anesthetic is usually the anesthetic of choice. Here the choice of anesthetic agent, and the technique of administration is relatively large. Ethylene, nitrous oxide, ether, pentothal and cyclopropane have been used and each with success. The agent used is apparently not as important as the skill with which it is administered.

Nitrous oxide and ethylene are relatively weak anesthetic agents. If these agents are chosen, the patient must be heavily sedated. Adequate sedation makes it possible to increase the oxygen concentration and reduce the dangers of anoxia. Ether and cyclopropane anesthesia for thoracic procedures have been enthusiastically accepted and condemned. Some authorities condemn ether anesthesia on the grounds that it is too irritating to infected pulmonary tissues. Others deny this accusation and are using it freely. Cyclopropane alone, or in combination with ether, is used extensively for thoracic surgery. Cyclopropane has been condemned on the grounds that it causes cardiac hyper-irritability and increases the danger of ventricular fibrillations. Some anesthesiologists add ether to the cyclopropane on the theory that it reduces the incidence of fibrillation. The gaseous and volatile anesthestic agents are administered with adequate oxygen, employing the closed carbon dioxide absorption technique.

It has been our experience[1] that a mixture of pentothal sodium and curare in combination with 50 per cent nitrous oxide and oxygen is the best anesthetic agent for all types of thoracic surgery. The pentothal-curare solution is administered intravenously. The nitrous oxide and oxygen are administered by inhalation through an endotracheal tube. The pentothal curare solution contains 25 mg. pentothal and 5 u. d-tubocurarine chloride per cubic centimeter. This concentration has proven satisfactory for all ages and for all types of surgery. The non-explosive properties of this agent make the use of the electrosurgical unit possible.

By combining d-tubocurarine with pentothal sodium we have found that the amount of penothal used in markedly reduced. The 50 per cent nitrous oxide provides a mild analgesia while the 50 per cent oxygen insures adequate oxygenation. The patient usually regains consciousness promptly following operation, thus decreasing the dangers of postoperative depression.

Since using this anesthetic agent we have encountered no fatal reflex stimuli or untoward cardiac irregularities, even though we have not used procaine routinely to reduce cardiac irritibility. We administer this anesthetic to small babies undergoing cardiac operations as well as to older patients undergoing extensive pulmonary procedures.

Proper closure of the pleura and expansion of the atelectatic lobes will help insure a smooth postoperative course. If catheter drainage is to be carried out, the lobes may be inflated after the chest has been tightly closed and before the catheters have been clamped. The lobes are expanded by exerting positive pressure until the atelectatic condition has been corrected. The catheters are then connected to a Steadman pump. This pump will remove intrapleural secretions and also maintain a slight negative pressure, which will further promote adequate expansion of the intact lobes.

If catheter drainage is not contemplated, a catheter may be left in the pleural cavity through

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MANAGEMENT OF DISEASES OF THE THORAX

Surgical Aspects

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IT IS the purpose of this brief and general presentation to consider the present status of pulmonary resection in its various forms, with respect to the therapy of the commonest pulmonary diseases now known to be at least in some degree amenable to surgical treatment.

To have a proper perspective on resectional therapy it is well to remember that this type of operation is of recent development. Sporadic attempts at partial lung removal had been made in the last part of the nineteenth century, and a very rare clinical success with partial lobectomy had been recorded, notably by Tuffier in the 1890's. The first groups of lobectomies with any significant attending success were reported by Brunn[5] in 1929, and Shenstone and Janes[18] in 1932. Brunn reported six cases with one death, and Shenstone fifteen cases with three deaths. These were principally cases of bronchiectasis and were done by a technique involving mass transfixion-ligature of the hilus and a resultant only partial amputation of the involved areas. The operation of total pneumonectomy remained an unsolved and uniformly lethal procedure until 1933 when Graham[9] reported a successful case for primary lung cancer. It is of interest to note that this first patient was a physician himself, and he has since led an active professional career. In the following year Cameron Haight[11] reported a total left lung removal for bronchiectasis with a living patient as the end result. These cases were a strong impetus to further efforts in many clinics, which eventuated in the fairly well standardized techniques of the present day.

Certain technical problems are common to all types of pulmonary resection which include total pneumonectomy, bilobectomy through the intermediate bronchus, total lobectomy, partial lobectomy and segmental resections. These common problems are concerned with (1) anesthesia, (2) the anatomy and dissection of the vascular structures in the hilus, (3) the method of closure and healing of the bronchial stump, (4) the prevention of empyema, (5) the prevention of bronchogenic infectious spreads (postoperative pneumonia), and (6) the prevention of surgical shock.

Anesthesia.—It is evident that the challenge of open-chest surgery has been the greatest impetus to the development of modern anesthesia and the anesthesiologist. The popularization of endotracheal anesthesia, as proposed and practiced experimentally by Meltzer, has been the principal factor in a safe open-chest technique. This permits an adequate airway in most positions, satisfactory aspiratory removal of blood and secretions, controlled reinflation of the lungs during and after resection, and adequate oxygenation in the pulmonary capillaries during operation. The choice of anesthetic agent is next in importance. It should preferably be an agent capable of inducing satisfactory anesthesia levels at a high oxygen concentration, and for this objective cyclopropane- and ether-oxygen are the most satisfactory. Of the two, ether provides the greater margin of safety, relatively less lability of anesthesia level, and a lesser disturbance in cardiac function. In our own clinic we carry out induction with cyclopropane or pentothal, followed by oxygen-ether, using a closed circuit rebreathing technique.

Anatomical Dissection.—As stated previously, the earliest resections were executed by a relatively crude mass-ligation technique which was relatively easy and immediately effective, but was associated with a high incidence of bronchial fistula and resultant empyema, as the strangulated tissues of the hilus usually sloughed out in the first week after operation. The classical contributions of Churchill,[6] Blades and Kent,[2] and Reinhoff,[17] among others, on the vascular anatomy of the pulmonary hilus permitted about 1940-42 a general shift to a precise anatomical dissection in the hilus with seriatim isolation and ligature of the arterial and venous branches as required. Churchill and Belsey,[7] Brock,[4] Boyden[3] and others pointed the way to conservative resection of pulmonary segments. The concept of the pulmonary segment rather than the entire lobe, as an anatomical and surgical pathological unit thus

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developed rapidly in the course of a half-dozen years.

Closure of the Bronchial Stump.—Whether in total pneumonectomy or lesser operations, this has evolved to a considerable but not entirely satisfactory degree. It is now generally considered that a clean sharp transection of the bronchus without proximal crushing or clamping and with an end closure using a single layer of simple nonabsorbable sutures (silk, cotton or wire) is the best. A further support of the closure by repleurization of the hilus, or a pedicle of pleura-lung to the stump, is an additional safeguard against failure due to tissue breakdown and fistula formation.

Prevention of Empyema.—Postoperative empyema is usually the result of a fistula in the bronchial stump, and not of direct contamination at the time of dissection. The incidence of fistula and empyema go hand in hand, as shown by Table I. The situation is quite comparable with the threat of peritonitis after intestinal resection, where a secure anastomosis usually means a clean peritoneum and steady recovery. Only rarely does a postoperative pleural effusion or hemothorax result in a clinical empyema requiring drainage, in the absence of a demonstrable bronchial fistula.

Prevention of Postoperative Pneumonia.—This is not usually a problem in tumor cases but is of great importance in bronchiectasis and chronic abscess, where highly infected purulent sputum may be retained in large amounts throughout the involved segments. In 130 consecutive resections of various types for bronchiectasis in our clinic (1938 to 1949) there were four hospital fatalities (3.1 per cent). Two of these deaths were due to contralateral bronchopneumonia, and were suffered before 1944 when penicillin became available for civilian hospital use. There are other factors than chemotherapy which promote safety by minimizing postoperative pneumonitic spreads. These are perfect anesthesia, meticulous pre-operative preparation including postural drainage and bronchoscopy, and pre-operative dental prophylaxis. The importance of the latter factor is not to be underestimated.

The other disease in which bronchial contamination during operation becomes all important is tuberculosis. Beyond the factors mentioned above, streptomycin therapy is proving to be of some protective value against immediate reactivation or spread of disease.

TABLE I

Technique	Operations	Bronchopleural Fistula	Empyema
Mass Ligation	22	12 (54.5%)	11 (50.0%)
Individual Dissection.....	63	10 (15.9%)	11 (17.4%)

Prevention of Surgical Shock Due to Blood Loss.—Accidental opening of a large pulmonary vessel in the course of dissection is not as frequent an accident as might be expected from the anatomical situation. A much more usual source of significant blood loss during operation is the exceedingly rich collateral circulation present in adhesions on the chest wall, diaphragm, and mediastinum as a result of chronic pulmonary disease and the attendant pleuritis. It has been shown by Wood and Miller,[19] and again by my colleagues, Liebow and Hales,[12] that vascular anastomoses exist between bronchial and pulmonary vessels to a significant degree in chronic pulmonary disease. Determinations of blood loss by colorometric or weighing techniques (of aspirated material in suction bottles and on gauze sponges or drapes) according to Baronofsky[1] have demonstrated that there may be a blood loss of 1400 c.c. in an average pneumonectomy or lobectomy. The importance of typed transfusable blood in reserve for these cases is thus made obvious. The use of hemostatic oxycel gauze and gelfoam for large denuded areas of dissection should also be mentioned as useful.

We shall now proceed to consider how attention to the various above-related factors has resulted in improvement of the results in the surgical treatment of bronchogenic carcinoma, bronchiectasis, pulmonary abscess, and tuberculosis, using as an example the case experience from the thoracic surgical service of the New Haven Hospital, where this work has been in progress since 1937-38.

Pulmonary Resection for Bronchiectasis

The development of resectional therapy for bronchiectasis is one of the brightest chapters in modern surgery. This procedure offers a chance for cure or great clinical improvement with social and economic rehabilitation to a majority of bronchiectactic sufferers.

Bronchiectasis is more often than not a disease

of multiple segments or lobes. From the standpoint of anatomical distribution our cases divide themselves roughly into thirds. In one-third the disease is confined to a single lobe or a lobular segment; in another third, the disease is multilobar but still unilateral; in the remaining third, both lungs are involved in a varying degree. In the last group, a bilateral program of surgery is feasible providing the upper lobes (excepting the left upper lobe lingula) are essentially uninvolved. The operations are spaced three months to one year apart when bilateral resections are required.

Before an operation is undertaken for the relief of bronchiectasis, an accurate and complete mapping of the bronchial disease by lipiodol bronchographic technique is required. Failure to recognize and remove all areas of disease invites an incomplete therapeutic result or failure. The lower lobes are most commonly involved, particularly the left lower. Two-thirds of the patients with left lower lobe disease have simultaneous bronchiectasis in the lingula of the left upper lobe, and about one-third to one-half of the patients with right lower lobe disease have associated involvement in the middle lobe.

In 1947 we reviewed our series of surgically treated bronchiectasis. There were then seventy-five patients, the ages of whom ranged up to forty-nine years. Ten of them had bilateral lobectomies, a total of eighty-five operations. The hospital postoperative mortalities were three (3.5 per cent). (Case mortality was 4 per cent.) Since 1947 there have been forty-five additional cases with one death; insufficient time has elapsed to classify the results in these cases.

The end results of the first seventy-five have been very encouraging. There have been no subsequent deaths in the series. Complete cure with absence of all symptoms resulted in thirty-five; a near cure with occasional mild cough and scanty, not measurable sputum resulted in seventeen cases. Altogether, fifty-two (70 per cent) were in these favorable categories. An additional fourteen (19 per cent) considered themselves greatly improved but had residual cough and sputum. Only one case was a complete therapeutic failure, in addition to the three deaths noted above. One of the deaths was due to avoidable respiratory obstruction at operation; two were due to spreading pneumonia in the opposite lung. There has been only one death since 1944 when penicillin became available for civilian use. The surviving patients are actively employed or working at home or studying. Several of the women have subsequently married and have had successful pregnancies. Symptoms of respiratory insufficiency have not been noted in unilateral cases, but several patients with bilateral involvement have dyspnea on exertion.

Resection for Chronic Lung Abscess

During our early experience with the treatment of lung abscess[15] (up to 1943) it became increasingly evident that acute and chronic abscess represented different therapeutic problems with respect to morbidity, mortality and late results. The conservative medical procedures and simple drainage operations which are so effective in the acute cases (that is, those with symptomatic duration of one to ten or twelve weeks) were found on systematic case analysis to be relatively ineffective and sometimes dangerous in the management of more chronic lesions (those of several months to years in duration).

Among twenty-two acute patients treated by bronchoscopy, postural drainage, sulfonamide chemotherapy (the only available at that time), and simple pneumonotomy, there was a single death, a mortality of 4.5 per cent. Twenty had excellent end results as indicated by relief of cough and sputum, with clearing of the x-ray findings. Among twenty-five patients with chronic lesions, the results were quite the reverse after simple drainage—a high mortality (seven deaths or 28 per cent) and eight patients with persistent cough, sputum, recurrent febrile attacks, bronchocutaneous fistula, and failure of x-ray clearing. Six of these patients required secondary lobar resections for cure. The reasons for this divergence in results between acute and chronic cases is to be found in the secondary pathologic changes which develop in the chronically abscessed lung lobe, and in a progressive deterioration of the chronic patient's general condition due to sepsis.

The local complications of chronic pulmonary abscess are: (1) bronchiectasis, (2) bronchostenosis, (3) organizing pneumonia and fibro-atelectasis, (4) multiple secondary abscess formation, (5) perforation and empyema, (6) hemorrhage. Simple drainage could not be expected to deal with these entirely, and it seemed wiser to substitute primary lobar or pulmonary resections in chronic cases as the situation required. After

preliminary bronchoscopy for diagnostic help in ruling out cancer, foreign body, et cetera, and after a lipiodol bronchogram to delineate the extent of secondary changes, twenty-four resections were carried out (fourteen primary, ten secondary). The early and late results have justified this departure toward radical treatment. The mortality was lower (three or 12.5 per cent) and the results improved (eighteen of the twenty-four patients well). Since the advent of penicillin in 1945 results have been even better. Expert anesthesia is a prerequisite, since the possibilities of bronchial contamination and obstructive anoxia are greater than in the usual cases of bronchiectasis and tumor. The literature of the past three years indicates that this apparently radical attitude is steadily gaining acceptance, although originally rejected by some thoracic surgeons as not sufficiently conservative.

The existence of a limited (encapsulated) interlobar or parietal empyema is not necessarily a contraindication to one-stage resection of the abscessed area. After evacuation of the local empyema at the time of thoracotomy, we have in six instances proceeded with removal of the original lobar disease quite successfully. These cases may require prolonged drainage of the residual pleural space, and it is quite obvious that only the protection afforded by penicillin and other chemotherapeutic agents makes this a feasible procedure.

It is well to emphasize here the not uncommon association of abscess with carcinoma in the age group forty-five and over. It may be occasionally difficult or impossible to entirely differentiate the two diseases by x-ray or bronchoscopy, which is another important reason for considering resection rather than drainage in the chronic cases.

Resection for Bronchogenic Carcinoma

After the first successful pneumonectomy for bronchogenic carcinoma was performed by Evarts Graham in 1933, intensive study by Rienhoff,[17] Churchill,[6] Crafoord[8] and others resulted in rapid technical advances. After 1938, reports of substantially large case series began to appear in the American and English literature. In 1947 Ochsner and DeBakey[16] were able to collect 2,034 cases from twelve different clinics, with an exploration rate of 29.2 per cent and a resection rate of 13.4 per cent.

It rapidly became evident to workers in this field that the limiting factors in the surgical treatment of pulmonary cancer were not technical but clinico-pathological. From one-half to two-thirds of patients are now appearing for treatment in an advanced inoperable state which precludes even an exploratory thoracotomy. The objective findings leading to this conclusion are usually as follows:

1. A positive biopsy from supraclavicular or axillary nodes.

2. Pleural effusion, especially when positive for cancer cells.

3. Skeletal or visceral metastases.

The bones usually involved in metastatic lung cancer are the thoraco-lumbar vertebrae, pelvic bones, upper femur, skull, ribs, and humerus.

This distribution is not dissimilar to that observed in breast cancer.

The viscera chiefly providing sites for metastases are the contralateral lung, liver, brain, kidneys, adrenals and skin.

4. Mediastinal extension, as evidenced by involvement of the recurrent nerve producing laryngeal cord paralysis and usually hoarseness, of the sympathetic chain producing a Horner's syndrome, or of the phrenic nerve causing paralysis of a hemi-diaphragm. Involvement of the superior vena cava may produce x-ray signs of mediastinal widening, as well as distended neck or arm veins with edema.

5. Bronchoscopic evidence of proximal extension to involve the trachea or carina. An important observation by Griess, McDonald and Claggett in 1945[10] showed that microscopic tumor invasion in the bronchial wall extended proximally on the average 2.5 cm. beyond the grossly visible lesion.

When a series of bronchogenic cancer patients has been screened by these criteria of inoperability, only 40 to 50 per cent will be left for serious surgical consideration. Of this group, a substantial fraction (about one-half) will be found at subsequent exploration to be incurable because of mediastinal invasion at the hilus, pleural and pericardial extension, remote lymph node involvement, and extension into the large veins. Yet it has been our practice to carry out palliative resection (i.e., without hope of cure) in as many of these as can be accomplished without transecting tumor in the bronchial stump. It appears that removal of a grossly infected, sometimes

bleeding and pain-producing lung as a palliative procedure has a great deal to recommend it. The surviving patients are usually symptomatically improved, and the average life span in this group is higher than in the untreated inoperable case.

Our first New Haven Hospital group of 100 cases began in 1938 and was complete in December, 1943.[13] The second hundred was on record by June, 1947,[14] and the third hundred by March, 1949. Comparing the three series, it is apparent that the exploration rate has risen from 32 to 47 per cent, and the resection rate from 12 to 30 per cent. This is in part due to a better case referral from medical and surgical colleagues in the State of Connecticut and in part to an increased willingness to attempt palliative resections where cure seems impossible. However, the line demarcating palliative and curative resections is sometimes hard to define. Our two longest post-resection survivors (now nine and seven years) were in a sense palliative resections. The first had a localized invasion of the chest wall which required extrapleural resection. The second had a complicating pneumococcal empyema at the time of admission, which fortunately was controlled with sulfathiazole, leading to a per primam healing of the postoperative chest and incision.

The operative mortalities in the three series were 25, 14, and 17 per cent, respectively; for the entire group of 300 cases, 17.4 per cent. It is probable that the increasing resection rate has led us to include poorer risks and technically more difficult cases. The usual causes of post-pneumonectomy death have been bronchial fistula and empyema, right heart failure and pulmonary edema; no patient has died of hemorrhage during or after operation.

Resection for Tuberculosis

From 1936 to date, our service has completed thirty resections for tuberculosis. These include seven lobectomies, two bilobectomies and twenty-one pneumonectomies. Fourteen patients were male, and sixteen female. They ranged in age up to seventy years, but the majority were in the fourth decade.

The therapeutic indications were as follows:

Thoracoplasty failures	9
Bronchostenosis of primary bronchus	7
Tuberculosis bronchiectasis	5
Tuberculoma and cancer suspects	4
Tension cavity	3
Miscellaneous	2

There have been no postoperative hospital deaths in this series. Two have subsequently died of complications, both due to tuberculosis spread, one with bronchial fistula and empyema.

There have been four instances of bronchopleural fistula (13.3 per cent). Of these patients, three developed empyema (10 per cent), one of whom, as already stated, died. There were four instances of contralateral spread of disease or reactivation (13.3 per cent). Three had wound complications which are now healed. Some of the above complications were multiple in the same patients.

As to end results, two patients previously mentioned are dead, and twenty-eight are living. Three are too recently operated upon to evaluate. Of the twenty-five sufficiently long-term survivors, twenty-two appear to be doing well (88 per cent). Seven of these are working; fifteen are at home or convalescing in a sanatorium with variable degrees of physical activity and negative sputum, but not all have had gastric concentrates and cultures.

These results are promising, perhaps due to case selection, and probably because streptomycin was used in the postoperative course of twenty-one patients. This drug was given for thirteen to nineteen days after operation, at levels of 1.0 to 2.0 grams daily. The most favorable group according to indications for operation has been that of post-thoracoplasty persistent cavity with positive sputum; the next most favorable, tuberculous bronchiectasis and the resections for tuberculoma. The poorest results were expected and obtained in the patients with tension cavity and unstable recent spreads with highly positive sputum. Our experience suggests strongly that resection is not sufficiently safe to be considered as a substitute for a well-conducted thoracoplasty when the usual indications for the latter operation exists.

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POSTOPERATIVE MANAGEMENT FOLLOWING SURGERY OF MALIGNANCIES OF THE LARGE BOWEL

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A DECADE ago most large clinics reported mortality rates in the vicinity of 20 per cent following resection of the rectum and colon. Today, the same groups report an incidence of 5 per cent or less. Undoubtedly the employment of chemotherapeutic measures together with improvements in anesthesia and surgical techniques have contributed to this encouraging reduction in postoperative mortality rate. Reduction in postoperative morbidity also is an achievement that may be largely credited to the use of antibiotics, intestinal antiseptics and to refinements in postoperative care. According to Clute and Kenny,[5] it is becoming increasingly apparent that many factors other than chemotherapy are responsible for the progress in surgical management. It is obvious that improvement in all phases of preoperative and postoperative care have contributed in no small part to diminishing postoperative deaths and morbidity following the extirpation of malignancies involving the rectum and colon. This has made it possible to bring surgery to older age groups. At the present time, resection of malignant lesions in the seventh and later decades of life with subsequent satisfactory recoveries is not at all uncommon. In our department, during the past year, the average postoperative stay for patients submitted to resections for malignant lesions of the colon was ten days. This represents a marked reduction in morbidity as compared to similar resections performed five years prior to this report.

It is our purpose to discuss a few of the important adjuncts to postoperative care that have contributed materially to the decreased postoperative mortality and morbidity rates, and which consequently are a part of the regimen followed on our service.

Oxygen Therapy

It would be an error to imply that extirpation of malignant lesions of the colon and rectum, particularly the latter, whether by the Miles type of operation, abdominoperineal proctosigmoidectomy or low end-to-end anastomosis, does not fall within the category of surgically traumatic and often shock-producing procedures. Mindful of this fact, we are particularly staunch advocates of adequate supportive measures to prevent peripheral vascular collapse in the immediate postoperative period. The ability to administer practically 100 per cent oxygen in the inspired air via the BLB mask, economically, efficiently and without discomfort to the patient, has established this measure as a routine in our postoperative regimen.

Boothby, Mayo and Lovelace[3] have advocated the use of 100 per cent oxygen as a prophylactic measure against shock in the immediate postoperative period, and they stress the fact that oxygen therapy should not be instituted exclusively where shock has developed. They point out that the oxygen saturation of arterial blood can be increased from 10 to 15 per cent by the administration of 100 per cent oxygen, and although this increased oxygenation apparently is small, it is important in states of diminished blood pressure since it does produce increased partial pressure of oxygen in the capillaries.

The blood as it passes through the capillaries gives up only about 40 per cent of its load of oxygen to the tissues under normal circulatory conditions. The venous blood, therefore, is still 60 per cent saturated, and the partial presence of oxygen in the capillaries is equivalent to approximately 33 mm. Hg. If for any reason the rate of circulation is decreased, as occurs in states of shock; for example, the blood may liberate 80 per cent or more of its load of oxygen to the tissues. The capillary partial pressure of oxygen will fall from a normal of about 35 mm. to 14 mm. Hg. In such a case, on the basis of the characteristic dissociation of oxyhemoglobin, the inspiration of 100 per cent oxygen could be expected to increase the amount of oxygen available to tissues as much as 50 per cent.

Experimentally, Blalock and his associates[2] have confirmed the prevailing impression that the inhalation of high concentrations of oxygen exerts beneficial effects in the treatment of peripheral circulatory failure. They showed that a

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considerable increase in oxygen was available to the tissues, as evidenced by a rise in oxygen saturation of arterial blood throughout the body. They further concluded that oxygen availability was further enhanced by a concomitant increase in carbon dioxide tension.

Many investigators have reported the occurrence of irritation, congestion and even edema of the lungs in animals breathing high concentrations of oxygen for prolonged periods of time. In their studies, Comroe and his associates[9] noted substernal distress in 82 per cent of the normal males receiving 100 per cent oxygen for twenty-four hour periods. They also observed that signs of nose and throat irritations were common and concluded that the objectionable symptoms were due to a tracheobronchitis. They suggested that if oxygen therapy must be continued beyond a twelve-hour period, the concentration should be decreased 50 to 60 per cent, unless that concentration is insufficient to oxygenate the arterial blood, since arterial oxygen unsaturation represents more of a threat to the patient's life than does the possibility of a tracheobronchitis.

On the other hand, Boothby[3] and Evans,[14] respectively, report series of over 800 clinical patients who received 100 per cent oxygen for forty-eight-hour periods with no untoward effects. We have used 100 per cent oxygen postoperatively for twelve to sixteen hours in over 500 patients. No undesirable effects were observed, and we recommend its use most highly as an adjunct in the prophylaxis against shock in the immediate postoperative period following resections of the rectum and colon. We feel that blood pressure and pulse are stabilized much more rapidly with the prophylactic use of high concentrations of oxygen.

Our incidence of postoperative atelectasis has been small since we have been administering 100 per cent oxygen via the BLB mask. We also feel that our incidence of postoperative ileus has been reduced. However, it is impossible to state definitely whether or not the administration of 100 per cent oxygen together with the use of gastric suction in the immediate postoperative period has been the contributing factor. Fine[15] and his co-workers have shown conclusively that the administration of high concentrations of oxygen accelerates the decompression of bowel obstructions along with intestinal intubation since it facilitates the more rapid removal of nitrogen from the obstructed bowel. In the event of postoperative pulmonary complications, such as atelectasis, bronchopneumonia, lobar pneumonia or pulmonary edema, high-concentration oxygen therapy is instituted at once and continued for at least twenty-four to forty-eight hours as indicated.

Since there is still considerable disagreement among authorities[3,4,11,14] as to the best method by which high concentrations of oxygen may be administered most efficiently and with the least discomfort to the patient, the oxygen saturation of arterial blood was studied by one of us (L.F.S.) pre-operatively and postoperatively in a group of sixteen patients submitted to resection for malignant lesions of the rectum and colon. These patients were studied with a view to evaluating the oxygen saturation of the arterial blood in the immediate postoperative period under practical rather than ideal conditions. The pre-operative studies were made on samples of blood from the femoral artery after sedation, upon arrival of the patients in the operating room and just before administration of the spinal anesthetic. Blood samples were again taken postoperatively from the femoral artery following oxygen therapy for twelve to fourteen hours.

These patients were divided into two groups of eight each. One group received the oxygen by intranasal catheter and the other group via BLB mask at a constant rate of 7 liters per minute. In the group receiving oxygen by catheter, the catheters were replaced every four hours to rule out stoppage. The BLB masks were removed only momentarily during the twelve- to fourteen-hour periods to permit wiping of the patient's face, with the exception of the fourth patient in Table II, from whom the mask was removed for an hour because of our inability to replace an empty oxygen tank. All patients had Levin tubes emerging from beneath their BLB masks which gave a possible point of oxygen leakage.

These patients were under heavy sedation during the immediate postoperative period, and no particular complaints were registered concerning either method of administering oxygen. Oxygen has been administered postoperatively with the BLB mask to approximately 500 patients on the proctology service, and no appreciable discomfort has been noted as has been recorded with normal subjects in experimental trials.

Method.—The oxygen content and capacity of the arterial blood samples were determined by the

Van Slyke and Neill manometric method. All samples were subjected to dual tests to check the accuracy of the determinations.*

A significant effect of pre-operative medication is noted in the reduced oxygen saturation of arterial blood reported in the control series (Tables I and II). Oxygen saturation was determined in a number of these patients the day before operation when the patients were not subjected to the effects of hypnotics and analgesics. Oxygen levels at that time ranged within normal levels of 92 to 95 volumes per cent saturation. This would indicate that a considerable degree of oxygen unsaturation might also exist in the immediate postoperative period where hypnotics and analgesics are used, and at a time when increased or at least normal oxygen saturation is desired (Tables I and II).

TABLE I. OXYGEN SATURATION OF ARTERIAL BLOOD: INTRANASAL OXYGEN

	Control (Preoperative)			14-16 Hours Postoperative		
	Oxygen Content*	Oxygen Capacity*	Per Cent Saturation	Oxygen Content*	Oxygen Capacity*	Per Cent Saturation
1.	16.35	21.77	75.1	16.57	21.18	78.2
2.	15.01	19.93	75.3	17.13	21.03	81.45
3.	18.33	22.07	83.05	17.36	22.97	75.6
4.	14.12	19.26	73.3	16.30	20.16	80.8
5.	17.12	21.63	79.1	15.89	20.35	78.1
6.	16.26	20.22	80.4	18.13	22.35	81.8
7.	15.58	19.28	80.8	16.41	19.42	84.5
8.	15.65	21.51	72.7	18.05	20.92	86.3

*Volumes per cent.

TABLE II. OXYGEN SATURATION OF ARTERIAL BLOOD: OXYGEN VIA BLB MASK

	Control (Preoperative)			14-16 Hours Postoperative		
	Oxygen Content*	Oxygen Capacity*	Per Cent Saturation	Oxygen Content*	Oxygen Capacity*	Per Cent Saturation
1.	17.49	19.93	87.70	19.56	19.23	100
2.	17.65	21.33	82.70	17.95	18.18	98.70
3.	15.22	20.66	73.70	19.23	20.56	93.50
4.	13.74	16.09	85.40	15.29	16.71	91.50
5.	17.44	22.67	77.00	19.37	19.61	98.80
6.	13.54	16.27	80.30	16.36	16.70	97.90
7.	14.42	16.70	83.40	16.95	16.88	100.00
8.	15.49	17.66	87.70	19.35	19.89	97.30

*Volumes per cent.

A relatively small number of patients have been studied thus far, but from the figures cited for Tables I and II, postoperative oxygen saturation, a definite trend is noted.

Obviously much higher oxygen saturation can be obtained in the immediate postoperative period by the use of the BLB mask than by administering oxygen via nasal catheter. Since it is during this period of a patient's convalesence that an increased oxygen saturation of arterial blood is most desirable, as has been previously pointed out, it would seem only plausible to administer oxygen by the most efficient route, namely, by use of the BLB mask.

Fluids and Electrolytes

During the past two decades much effort has been expended in attempts to place the diagnosis and treatment of dehydration on an arithmetical basis as Coller,[6] Moyer[20] and others have testified. All methods suggested have been based on the mistaken assumption that the various blood solutes (sodium chloride and plasma proteins) and the suspended particle (red blood cells) volumes were approximate constants. In spite of the increased emphasis placed on laboratory methods for controlling water balance, there are no universally applicable or dependable laboratory procedures or formulas available for the detection and treatment of fluid disequilibrium. Therefore, a clinical approach appears to be more generally applicable to the problem.

Since in the postoperative period our resection patients are subjected to continuous intestinal decompression for periods usually of two to three days, they receive, during this interval, fluids and nutrients by the parenteral route. Schedule I (next page) is a representative excerpt from our postoperative fluid regimen which is used as a guide by residents and interns.

Explanation of Schedule I.—

1. Oral intake is limited in an attempt to prevent excessive lavaging of gastric secretions while the

*Oxygen saturation measurements were made in the Department of Physiology, Temple University Medical School, by E. M. Greisheimer, Ph.D., M.D., and D. Ellis, B.A.

SCHEDULE I

Fluid intake 2500 to 4000 c.c. daily by parenteral route until these volumes can be taken orally. Requirement determined by skin turgor, perspiration, comparison preoperative and postoperative blood studies, urinary output, loss by vaporization, Wangensteen suction, Babcock sump drain.

Example

1. Oral intake limited to maximum of 1000 c.c. H_2O or Ringer's solution, preferred with gastric suction working twenty-four hours.

2. Five per cent glucose in normal saline administered to equal volume aspirated via Wangensteen suction and sump drain, plus estimated salt loss by perspiration.

3. Five per cent glucose in distilled water administered to equal volume urine output (800 to 1000 c.c. minimum desired, and anticipated on first postoperative day), plus estimated water loss by vaporization (1000 c.c. minimum).

4. Daily protein requirements fulfilled by supplementing fluids with (1 gm./kg. body weight) protein hydrolysates such as parenamine or amigen.

5. Whole blood in small transfusions (250 c.c.) if indicated by red blood cell count and hematocrit.

Wangensteen suction is functioning and to eliminate the tendency to alkalosis.

2. As Coller[7,8] has suggested, we limit, or refrain from using, parenteral salt solutions in the immediate (twenty-four hours) postoperative period. It has been found that by doing so the blood chloride levels suffer only moderately, and the daily urinary output is of more adequate volume. With this regimen, oliguria has been observed rarely. The volume for volume of gastric drainage plus the volume lost via the Babcock sump drains, when they are used, is replaced with normal saline solution. Additional saline is administered when perspiration is excessive.

3. A minimum of 1000 c.c. of 5 per cent glucose in distilled water is administered in the immediate postoperative period to promote an adequate urinary output. The daily urine volume is then replaced, volume for volume, with 5 per cent glucose in distilled water, plus the estimated water lost by evaporation, which is considered to be a minimum of 1000 c.c.

Wangensteen has suggested that a minimum excretion of 700 c.c. of urine is essential in the postoperative patient. Fluids are always administered with greatest care as to volume and rate of administration to patients in the older age groups and to those with possible myocardial damage.

Lockhart and Elman[19] recently demonstrated that the proper rate at which intravenous glucose solutions may be injected without producing glycosuria and unwanted diuresis is considerably slower than that which was previously suggested and supported by the work of Woodyatt. They showed that glucose solutions injected at rates less than 0.5 gm per kilogram of body weight per hour produced no glycosuria, while faster rates of injection produced glycosuria and diuresis. In other words, a liter of 5 per cent glucose solution should require one hour and twenty-five minutes if glycosuria and the associated diuretic effect is to be avoided. They also pointed out that amino acids injected in conjunction with glucose effectively reduced the degree of glycosuria as compared with glucose alone injected at the same rate. They believe that amino acids act by increasing the utilization of glucose in the tissues rather than by lowering the renal threshold for glucose excretion.

Protein Balance

Protein has a special significance in surgical patients because of the fact that injury and operation lead to tremendous protein loss. Even the phenomenon of surgical shock is concerned with the lack of sufficient circulating plasma protein to maintain normal fluid relationship. Jones and Eaton,[17] 1933, first reported that edema resulting from hypoproteinemia was not uncommon in patients before and after operations for gastrointestinal lesions, and emphasized that the administration of large amounts of sodium chloride intensified the edema. Since then the literature has become voluminous in descriptions of the effects of hypoproteinemia on the postoperative patient.

Ravdin,[22] as well as other workers, has shown experimentally and clinically that wound healing is delayed and inadequate where hypoproteinemia exists. Hartzell and his associates[16] found hypoproteinemia to be present more frequently than vitamin C deficiencies in patients with wound dehiscence. Mulholland[21] and co-workers demonstrated the amazing rate of healing of decubitus ulcers when the therapeutic regimen is unchanged except for an increased protein intake. Whipple[24] advocated the correction of existing anemias in protein-deficient surgical patients, to avoid further degrees of anemia.

Every operation, injury and infection is associated with a period of increased nitrogen catabo-

lism resulting in most instances in a negative nitrogen balance. Culbertson[10] found that approximately 25 gm. of nitrogen were lost per day following major surgical procedures. Under normal conditions, protein nutrition in the adult is maintained by the intake of an adequate, well-balanced diet containing among other things about 1 gm. of protein per kilogram of body weight per day.

Koop and associates[18] found that it was necessary to provide a nitrogen intake of 0.30 gm. per kilogram of body weight and a caloric intake of 30 calories per kilogram of body weight to maintain nitrogen balance in the immediate postoperative period following gastrectomies and cranial operations. Elman[13] states that some postoperative patients will have protein requirements as high as 300 to 400 gm. per day, but recommends the routine administration of 100 gm. of hydrolyzed protein and 100 gm. of carbohydrate parenterally in the immediate postoperative period to those patients who cannot take oral feedings.

Koop has also provided good evidence that forced feeding prior to operation is of real value because considerable nitrogen can be stored and drawn on in the immediate postoperative period. It is our policy to admit patients to our service five to seven days prior to operation. During this period they receive a high protein (120 gm.), high carbohydrate (400 gm.), and low residue diet with supplemental feedings of protein concentrate, or hydrolysate such as essenamine or delcos granules, so that on an average of 3 gm. of protein per kilogram of body weight are ingested daily.

Postoperatively we provide all resected patients with a minimum of 1 gm. of protein hydrolysate (parenamine or amigen) per kilogram of body weight daily by the intravenous route until proteins can be taken by mouth in adequate amounts. Some patients, particularly those subjected to the Miles resection, require a greater protein intake, apparently because of the large volume of serous drainage from their perineal wounds. In the immediate postoperative period daily serum protein studies are performed along with frequent hemoglobin and hematocrit determinations. These studies indicate that the regimen described above usually is adequate to maintain plasma protein levels within normal limits. Protein concentrates by mouth are started the day after oral feedings are begun. Anemias are corrected by frequent small transfusions.

Intestinal Antiseptics and Antibiotics

As has been mentioned above, candidates for resection of malignant lesions of the colon and rectum are admitted to the hospital five to seven days prior to operation at which time the oral administration of intestinal antiseptics is instituted. All patients receive sulfathalidine 0.1 gm. per kilogram of body weight during each twenty-four-hour period for a minimum of five days. The drug is administered in suspension to enhance its effectiveness. Forty-eight hours prior to intubation with the Levin tube (four hours before operation), oral streptomycin is started, 2 gm. being administered in each twenty-four hour period in divided doses every four hours.

The senior author and Rowe[23] have demonstrated with coliform counts that the combination of sulfathalidine and streptomycin produces the most efficient degree of intestinal antiseptis and have pointed out that the risk of producing resistant organisms is thereby minimized. The oral administration of sulfathalidine is again instituted postoperatively the day after oral feedings are resumed, according to the preoperative dosage schedule. The postoperative use of sulfathalidine is particularly recommended in those patients submitted to abdominoperineal proctosigmoidectomy with preservation of the sphincter muscles, or where open perineal wounds may exist in the presence of fecal contamination.

Postoperatively, penicillin is administered prophylactically for five to seven days. We subscribe to the infrequent dosage schedules for aqueous penicillin as have been recommended by Zubrod[26] and others.[25] These workers have demonstrated that the bacteriostatic effects of aqueous penicillin outlast the measurable blood levels by many hours, and recommend that doses of 300,000 units of aqueous penicillin intramuscularly every twelve hours offer a more rational method of controlling penicillin-susceptible infections than by maintaining blood levels with the frequent dosage schedule. This method of administering penicillin has the additional advantages of decreasing the work for the nursing staff and producing less discomfort to the patient.

Miscellaneous

It is not possible to discuss in detail all of the phases of postoperative care, but some of the important features of the regimen followed may be mentioned. Among these are early ambula-

tion, anticoagulant therapy and intestinal decompression.

We heartily subscribe to the initiation of early ambulation, and routinely, all patients in whom resection with end-to-end anastomosis has been performed, are out of bed and walking on their first or second postoperative day. Ambulation usually is delayed, however, until the third or fourth postoperative day where abdominoperineal proctosigmoidectomy has been performed because in this procedure the pelvic floor is not reperitonealized, and we feel that delayed ambulation prevents the small bowel from prolapsing about the recently "pulled through" colon.

We favor the conservative method of treating phlebothrombosis and thrombophlebitis, when they occur. Anticoagulant therapy is instituted in the form of oral dicumarol, as recommended by Allen and Barker.[1] Continuous intravenous heparin is used until dicumarol becomes effective, when a more rapid anticoagulant effect is indicated, as in instances of pulmonary embolism. Should the latter accident occur, we feel that blocking the stellate ganglia with procaine is of considerable benefit in improving the survival rate. Routinely, all patients over sixty years of age, particularly those with varicose veins or a history of thrombophlebitis or embolic phenomena, have their legs and thighs snugly wrapped with elastic bandages before going to the operating room. This procedure is continued for at least a week postoperatively.

As we previously mentioned, intestinal decompression by way of Levin tube with Wangensteen suction is maintained in the immediate postoperative period, following resection of all rectal and colon malignancies, until peristalsis becomes active. Decompression usually is carried out for a two- to three-day period, but longer if ileus occurs. If postoperative mechanical obstruction occurs, a Miller-Abbott or Cantor tube is introduced to the lowest attainable reaches of the small bowel, and conservative therapy by means of suction is attempted first. If this fails, early exploration and more definite treatment is recommended. We admit that each patient at all times must be treated according to his individual needs.

Summary

1. We feel that the administration of high concentrations of oxygen in the immediate postoperative period is of real value as a supportive measure against peripheral vascular collapse. It is during this period that a considerable degree of arterial oxygen unsaturation exists. Oxygen can be administered most efficiently via the BLB mask.

2. Some of the essentials of fluid balance and protein requirements in the immediate postoperative period are discussed.

3. In our hands the combined oral administration of sulfathalidine and streptomycin has proven to be the most satisfactory method of reducing the bacterial flora of the colon. Aqueous penicillin is used, prophylactically, on a schedule of large infrequent doses.

4. Other phases of our regimen of postoperative care have been mentioned, but in the final analysis each patient is treated according to his individual needs.

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EMPLOYMENT OF RECTUS SHEATH AND SUPERIOR PUBIC LIGAMENT IN DIRECT INGUINAL HERNIA

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RECURRENCE rates for direct inguinal hernia are at such levels that thorough clinical trial of the newer basic methods is justified. As late as 1934 Andrews and Bissell[1] suggested abandonment of the operation for direct inguinal hernia unless pain was present. Recently Ferguson[7] at the University of Minnesota analyzed 186 patients operated upon for hernia, and followed from three to seven and one half years after operation. Thirty-one per cent of the direct variety recurred. There were sixteen direct inguinal hernias and five recurrences. The more experienced surgeons, though dealing with mainly difficult cases, had the same recurrence rate as interns and residents. The series covered a period from January 1, 1940, to June 30, 1944.

Ever since Marcy[14] in 1881 advocated and Bassini[2,3,4] popularized suture of the inguinal strata to the inguinal ligament, nearly all popularly used procedures have been variants of such basic methods. In 1898, Lotheissen[8] used the superior pubic ligament which had been described by Cooper[6] in 1804. Narath[16] of Utracht was said to have used it before him. About a decade ago, after restudy of the inguinal anatomy, McVay[9,10,11,12] found that the natural attachment of the lower inguinal strata was the superior pubic and not the inguinal ligament. It was also found that the inferior layers of the inguinal strata were deficient in seven out of every 100 bodies. McVay revived and modified the Lotheissen operation and recently[13] has reported further surgical experience with the method and some changes in it. Rice has also modified the Lotheissen operation.[17]

While operating on a soldier in a desert hospital during World War II, I encountered not only absence of the inguinal ligament following previous operations but also absence of the lower transversus abdominis. To meet this situation I turned down a flap of rectus and pyramidalis sheath and sutured it to the superior pubic ligament. The procedure worked out so well that I operated on twenty-two patients with direct inguinal hernia using this method while in service with the armed forces.[15] Two of the patients in this series had recurrent direct inguinal hernias which had been operated on elsewhere. Since returning to civilian life and up to April 1, 1949, I have operated on fifty-eight direct inguinal hernias, making a total of eighty operated upon since 1943.

The rectus flap superior pubic ligament method was used in all but five. Others since have reported use of the method which I described in 1946.[5]

A five-year examination follow-up is planned, and so far only letter follow-up has been used. However, in order to encourage reporting of recurrences, the patients have had the situation explained to them and their co-operation has been solicited. To date, two recurrences have been found. One who had been operated upon by me showed a recurrent hernia at the internal ring. The rectus sheath flap was solid.

It now is becoming apparent more generally that superior pubic ligament operations for direct inguinal hernia are more anatomic and physiologic and give the lowest recurrence rates.

Method

Upon opening the cremaster muscle, an indirect hernia is looked for. If none is present, a tongue of peritoneum can be found nearly always and the finger inserted into the abdominal cavity. The extent of the direct inguinal hernia or redundancy of the floor of the inguinal canal can be tested. A large direct sac is opened, excised and its walls resutured. A redundancy can be tucked back into the areolar tissue medial to the superior pubic ligament. The transversus is incised over the superior pubic ligament and the exposure of the ligament completed by blunt dissection, using the finger to retract the femoral vessels. The fascia of the external oblique is dissected back as far as possible on the rectus sheath and a boomerang-shaped flap cut in the sheath of the pyramidalis and rectus muscles. The flap is sutured to the superior pubic ligament for a distance of about 4 centimeters from the pubic spine. Silk or cotton is used. Sutures in the rectus flap are of the mattress type at right angles to the direction of the

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STUDIES IN EXPERIMENTAL GASTRIC CARCINOGENESIS

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MAN STANDS uniquely alone in the animal world with respect to cancer of the stomach, for of all human types of malignancy, this cancer is the greatest killer, but the spontaneous appearance of adenocarcinoma of the stomach in lower animals is an extremely rare phenomenon. Up to 1936 only three cases of spontaneous gastric adenocarcinoma in mice had been reported in the literature. By 1938 two more had been added to the list. This survey covered a period of several decades with observation of many thousands of mice by several groups of investigators.

Today we are still concentrating our effort on inbred strains of mice. Several strains of more recent origin do develop spontaneous prepyloric glandular lesions as the animals grow old, but there is not general agreement as to the malignant quality of the lesions. The "I" strain started by Strong in 1925 has a high incidence of adenomatous hyperplastic lesions appearing spontaneously in the pyloric stomach.[18] A more recent strain produced in Strong's laboratories, the "NHO" strain, has prepyloric lesions that consist of branching glandular elements with small cysts and polypoid projections. This strain and a subline, the "BRS," are being extensively used today. Recently it was shown that whole body x-ray irradiation and subcutaneously implanted methylcholanthrene were both ineffective in changing the incidence or degree of malignancy of these lesions in these strains.[9] This observation is of very real interest and importance in this field.

The well established "C3H" and "A" strains are also widely used. The author is operating upon mice of these strains and implanting 20-methylcholanthrene into the glandular stomach wall. The animals are then bred and the offspring maintained as breeding families. The mice in the families are then treated in the same manner, and this procedure will be carried through successive generations. Ultimately the strains will be crossed, and genetic changes tending to a susceptibility for glandular cancer will be looked for.

Dogs are very refractory to the induction of cancer of the stomach with carcinogens, but lately there is some evidence that the problem of gastric polyposis may well be studied in old dogs since they do develop this lesion with age. Monkeys do not develop cancers with the present known carcinogens, as shown this past year by Pfeiffer and Allen when they reported an eleven-year study using fifty monkeys.[15] Rabbits have a glandular mucosa that regenerates from traumatically induced ulcers with a hyperplastic glandular overgrowth, but carcinogens given to these animals so far have failed to produce malignant lesions.[7] Laboratory rats will develop adenocarcinoma in the glandular or prepyloric stomach when carcinogens are implanted in the stomach mucosa, but the labile nature of the squamous forestomach of rats hinders sound evaluation of results. It can be appreciated from this brief summary that inbred strains of mice are still the animals of choice for this type of investigation.

Twenty methylochlanthrene and 1, 2, 5, 6 dibenzanthracene are the most effective carcinogens in use today for gastric carcinogenesis. Other hydrocarbons are used for cancers elsewhere in the body, but these two stimulate epithelial cancers in the gastrointestinal tract better than any others.

Methylcholanthrene fed to mice in prepared feeds is ineffective in the glandular portion of the mouse stomach. The squamous lined fore-stomach of mice will show squamous carcinomas, but these are not comparable to human adenocarcinomas. Consequently, much effort today is directed toward the prepyloric or glandular stomach. Methylcholanthrene can be implanted in the glandular stomach wall as crystals or injected in horse serum, and glandular cancers will result. To date, the dissolved carcinogen seems to be more effective than the plain crystals.

Lorenz of the National Cancer Institute has developed many emulsions of methylcholanthrene in olive oil or mineral oil as a base, utilizing various wetting agents to obtain close contact with the mucosa.[11] These emulsions, however, do not induce glandular cancers; only the squamous forestomach and the intestine develop cancers. The mineral oil emulsions have a higher viscosity than

From the Department of Surgery, University of Minnesota Medical School, Minneapolis, Minnesota.
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the olive oil emulsions, and this factor seems to be important in getting more fore-stomach cancers with the former emulsions as against the olive oil emulsions.[12] In addition, precancerous esophageal lesions also appear with the mineral oil emulsions and not with the olive oil emulsions. The "I" strain mouse with the spontaneous glandular stomach hypertrophy so far has been refractory to this type of induction in the glandular stomach.[12] When mineral oil emulsions are used the first squamous lesions appear in ninety-four to 130 days. When methylochalanthrene is implanted in the gastric wall the adenocarcinomas develop as early as sixty days and as late as 330 days. The author uses mineral oil emulsions similar to those mentioned above and intubates the stomachs of mice daily giving a measured quantity. This will be considered in greater detail later.

There are still discrepancies as to what constitutes a malignancy in this type of animal work. Earlier investigators labeled any hyperplastic cystic lesion that had a tendency to downgrowth as malignant. Today the animal lesions must be anaplastic and infiltrate all layers of the stomach wall and grow on the serosal surface. Metastases, of course, constitute the best, most unequivocal evidence of malignant processes.

Many dietary substances peculiar to man have recently been investigated in mice. Tobacco tar was reported carcinogenic for rats' stomachs some years ago by Roffo, but the most recent studies using thick inhaled tobacco smoke and ingested tars have produced no gastric cancers. W. R. Peacock of Glasgow, Scotland, has three adenocarcinomas out of 148 genetically heterozygous mice fed for months on super-heated fats. The fats are those used in cooking for humans and are heated and reheated to 300° Centigrade.[14] These apparently are the first well-authenticated true malignancies produced in this manner, since much doubt is thrown upon Roffo's earlier work with hot fats in rats. Experiments are in progress in our laboratories testing the effects of mustard on mouse gastric mucosa along with methylcholanthrene. Heat is indicted as a physical carcinogen, still rather empirically, but meagre evidence is appearing to substantiate the idea of thermal internal carcinogenesis and thermal initiation of atrophic gastritis. Only a few experimental results in animals are available. The author is combining the effects of heat with the desquamating effect of eugenol and the carcinogenic effect of methylcholanthrene emulsions. The eugenol is given by tube to mice of various strains several times weekly, and then hot carcinogenic emulsion is instilled into the stomachs of one series and cold emulsion into another series on alternate days. This work was recently started, and no data are available as yet. A previous experiment by the author intubating a series of A-C3H and DBA mice with hot water alone at 65° Centigrade gave negative results in the esophagus and stomach, reflecting the results of others using the same technique.

The mucus of the stomach is considered to be a protective barrier for the delicate glandular cells. Ivy has recently shown that it has a thermal insulating effect with temperature around 62° Centigrade.[4] Mucus also exerts protective effects by acting to buffer and neutralize acid secretion. This complicated four-fold function of gastric and esophageal mucus provides an excellent basis for work. It is believed today that our carcinogenic agents would act on the glandular cells if we could produce mice that had long-standing atrophic gastritis and impaired mucous cell function. That there is a specific intracellular resistance of gastric glandular cells to carcinogens is doubted.

Bile is known to penetrate mucous layers and this fact has intrigued investigators for some time. To date, tauracholic acid alone has not proved to be carcinogenic.[2] On the other hand, the best gastric carcinogen, 20-methylcholanthrene, can be synthesized from bile acids and has a chemical structure similar to bile acids. No proof exists showing such a synthesis within the animal body as far as is known today. The author now has experiments under way testing the possible effects of bile as whole bile salts along with methylcholanthrene in the mouse stomach. The bile might penetrate the mucous barrier and over long periods of time allow sufficient direct action of the carcinogen to induce adenocarcinomas. Recently Hollander has demonstrated the tremendous desquamating effect of eugenol on the gastric mucosa in pouch dogs. He has studied the complete denuding and regeneration of the mucosa over three-month intervals. The author is using eugenol in the above-mentioned experiment with the hot and cold carcinogen emulsions. It is hoped a procedure of this kind will enable us to produce adenocarcinomas more readily and more abundantly. A good deal of basic work on mucous cells and their secretion is needed, and correlations with human gastric physiology is a must.

Other experiments in our laboratory deal with the effects of various deficiencies on the gastric mucosa. Mice are kept on iron deficient diets until they develop anemias in order to determine the influence of this anemic state on the development of adenocarcinomas due to methylcholanthrene implanted into the gastric glandular wall. Rats, infected with the spiroptera worm gongylonema neoplasticum, are being fed vitamin deficient diets in order to more thoroughly evaluate the much debated results of Johann Fibiger.[5,6] The generalized pronounced effects of vitamin deficiencies in epithelial cells seems too important to be ignored even though extensive work has been done in this field.[19] The metaplasia of glandular cells into squamous cells would seem to involve basic metabolic processes, and it is hoped some faint additional light might be shed upon this field in the near future.

This has been a brief summary of some of the basic animal research now under way in the University of Minnesota Medical School relative to stomach cancer. Many other projects, clinical, physiological, and chemical, are in progress in various departments, and round out the research program in this field.

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DIRECT INGUINAL HERNIA

(Continued from Page 909)

fibers. A small, cervix cutting needle is used for deep sutures into the superior pubic ligament. If there is any evidence of weakness at the hinge, a row of sutures may be placed there. The cord is dropped into the concavity and the external oblique sutured anterior to it, allowing an aperture at the external ring sufficient to admit the tip of the fifth finger. The procedure occupies no more time than older methods, and difficulties with vessels are more hypothetical than real.

In addition to direct inguinal hernias, the method is applicable to indirect inguinal hernias with large internal rings and femoral hernias. It is especially applicable to direct recurrences because the work can be carried out in a virgin field.

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History of Medicine In Minnesota

MEDICINE AND ITS PRACTITIONERS IN OLMSTED COUNTY PRIOR TO 1900

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(Continued from August issue)

Practitioners of Medicine in Olmsted County

Itinerant Practitioners, Quacks and Medicine Shows.—Olmsted County, and particularly Rochester, from the fifties into the nineties and especially in the late sixties and the seventies, was a happy hunting ground for all sorts of irregular practitioners of the healing art. Some of these gentry were frankly itinerant. Many of them, equally transient, made a point of expressing appreciation of the beauty and enterprise of Rochester and declaring intention of settling there permanently. Many came from Wisconsin and Illinois where, in the seventies, laws were enacted against irregular and unqualified practitioners. In that decade Rochester newspapers began to publish protests against the "tramp doctors" that were infesting the city and imposing on the credulous, of whom there were many. The abortive medical licensure legislation of 1869 (repealed in 1870) in Minnesota served only to exacerbate the nuisance of quacks and impostors. Designed to exclude the irregular and the unqualified, the act failed signally in its purpose. It rather gave the irregulars a chance, which they eagerly accepted, to organize medical societies and issue certificates to practice. After the protective legislation of 1883 the comments in the press chiefly concerned strangers in the city who had been arrested for practicing medicine without license.

From more than a hundred names of such exploiters of the public, a few are given here. As early as 1855 came Dr. William Hunter, who for a time lived in St. Peter, giving "medical inhalation and all else," especially for tuberculosis and other diseases of the lungs and the "air passages." Dr. McCall, of Wisconsin, in 1862 was representative of many who toured the county lecturing on anatomy, physiology and disease. A few years later the *Rochester Post* of April 3, 1869, commented on such a lecturer and his co-worker:

> We have been told of a sharp system of medical practice by a firm who were this week in Pleasant Grove and Stewartville, in this county, and are on their way further west. A Dr. Hamelin whose advertising has been published in this paper for a couple of weeks, made his appearance at Pleasant Grove, where he gave an interesting free lecture on anatomy and physiology, and announced the coming of Dr. Morse, who appeared within a few days in the neighborhood, giving diagnosis to large numbers of the afflicted for whom he prescribed at rates ranging from $50 upward, half cash and half notes.

The local career of Dr. Morse ended when an irate citizen of Pleasant Grove followed him to Stewartville and stood outside the doctor's stopping place shouting the practitioner's trickery to all listeners. The man from Pleasant Grove received back his cash and notes and the doctor departed.

In 1863 Dr. J. F. Underwood, "celebrated oculist and aurist" of Chicago, came

to the Stevens House, Rochester, to treat any disease of long standing, especially of eye and ear. There were countless "distinguished" opticians; Dr. A. Weinhold was one of the earliest, in 1864. In 1865 Dr. B. Phelps and Dr. F. H. Sime, oculists and aurists, came from St. Paul, and thereafter Dr. Sime returned at intervals, from Chicago and later from Winona, where he represented the State Eye and Ear Infirmary, offering "the best French and English artificial eyes," which he inserted without pain, he said, and which he guaranteed to fit. In the later sixties came Dr. Barth, "the most eminent surgeon now living," representative of the Milwaukee Medical and Surgical Institute, which was established in 1867. Dr. N. I. Lund was a homeopath from Norway who brought "renowned European Rheumatic Chains" which, he claimed, had been successfully applied for numberless diseases where all other remedies had failed. And in 1868 and 1869 came the notorious Dr. William P. Duvall, the Natural Healer and Practical Physician of the Western Healing Institute. A botanic physician, Dr. Duvall had the added advantage, he stated, of being the seventh son of a seventh son and of having possessed since the age of ten years peculiar and natural healing powers, whereby he healed all known diseases by laying on of hands: "The patient has only to sit calmly a few minutes, and all pains and ailments will gradually pass away." It presently came out that Dr. Duvall, who had started life as William D. Potts, had poisoned four of his wives, the last of them a girl whom he had married at Owatonna, Minnesota. He was checked in his career by imprisonment in the state penitentiary of Wisconsin at hard labor.

There were Dr. Ferrard, the "celebrated Spanish physician," who treated for deafness, sore eyes and asthma; Dr. J. J. S. McCabe, Indian Doctor; Schenastanaux, Indian Doctor; and Dr. Lyon, the "celebrated Brazilian doctor," whose vegetable treatment was advertised as a triumphant victory over sickness and premature death: "No indelicate examinations or exposures. By observation alone the doctor will explain and point out location of trouble without asking questions and without requiring any explanations." Dr. William Levingston, the Old Indian Doctor, for some time in 1878-1879 made Rochester his headquarters. Dr. S. C. Torpy in the seventies came from Green Bay, Wisconsin, practiced under the Indian botanical system of medicine and claimed to cure all kinds of chronic diseases, fever sores and phthisis, abscesses and asthma. He would announce that he was coming for one week and would advise his numerous patients and suffering humanity in general to take due notice and govern themselves accordingly. Dr. Spinney, proprietor of the Electro Medical Institute of Milwaukee, announced that he was very successful in the treatment of "diseases of the lungs and internal organs." Several of the surgeons of the Central Surgical Infirmary of Indianapolis, Indiana, came seeking to help those who were afflicted with any disease of the eye or ear, goiter, cross eyes, clubfoot, spinal curvature, fistula-in-ano, piles, epilepsy and chronic diseases. Dr. Hebern Claflin cured cancers without the knife, as did Dr. W. Wheeler, who added to his professional repertoire cures for sore eyes, female diseases, rheumatism and catarrh. There were other traveling practitioners, ad infinitum, including "foot doctors" and clairvoyants and magnetic healers. One of the last-named lectured on "human magnetism or the electric philosophy of life."

Worthy of mention also are certain practitioners, not frankly itinerant, of the early decades who advertised freely in local newspapers of many sections of country other than their own places of residence and who probably reaped a considerable harvest from the long-distance business that resulted. From the *Federal Union*, of Rochester, of April 27, 1872, comes the following excerpt from a detailed advertisement that perhaps had special appeal:

Dr. C. M. Mack, graduate of Guy's Hospital, London, England, and for over two years confidential physician to Her Majesty, the Queen; also late of the Medical University of New York, has now located at Indianapolis, and will give advice to the sick abroad as well as home. . . . The reasons are: 1st: That your local physicians are so much occupied in the treatment of acute diseases at the bedside of their patients that they have neither the time nor patience to give proper attention to a long standing and supposedly incurable disease. 2nd: The man of eminence who is called upon may have gained all his great reputation in surgery, instead of medicine, so that the invalid, not recognizing this fact, supposes he or she is trying the best skill that our country affords. Dr. Mack is successfully treating just such cases all over the country, by letter and express, whose faces have never been seen, as well as in his office at home. . .

Dr. Mack invited every reader of the announcement who had "any affection of the head, throat, lungs, heart, stomach, liver, kidneys, bladder, bowels, womb, genital organs, or rheumatism or neurologic difficulties, or eruptions of the skin, blood impurities, tumors, cancers, nervous affections, diseases of the eye or ear, etc . . . to send the symptoms they have and the price of a package of medicine ($5.00) on receipt of which they will receive one package free."

Still another type of impostor was a Dr. John Burns, who came from Iowa, it was said, and frequented Winona and Rochester. The *Winona Republican,* quoted by the *Rochester Post* of April 1, 1881, said:

It seems to be a successful game he is working, the details of which are as follows: In the morning his head is free from the debilitating effects of the previous night's libations and he sallies forth with business in his eye. If he meets a person on the street who seems to be sick, he is liable to stop the individual, talk a few minutes and then tell him what ails him. It makes no difference where he finds his invalid; he looks until one is discovered, seems to be wonderfully endowed with the power to read his disease and the man's character; inspires confidence by his adroit and honest behavior and finally prescribes for him. In this way he picks up two or three dollars during the forenoon and readily spends it in the afternoon and evening. Once before he was lodged in the station house in Winona, his second incarceration being chronicled last night. John should take a good long walk.

Not long afterward there was an account of his being in jail at Rochester; he died from delirium tremens at Brainerd in 1882, it was reported.

Certain of the visiting practitioners were accepted as of a respectable category. Dr. Clark A. Miner, of Chicago, who came to Rochester every three months, beginning in 1874, established on Broadway, in 1878, the Rochester Medical Institute, which was staffed by ten physicians and surgeons; evidence has not appeared that the institute was long lived. Dr. Lewis Pond came from Aurora, Illinois; there is mention of his having removed a cancer from a patient at Haverhill. Dr. L. P. Bunce, an eclectic practitioner of Lake City, primarily oculist and oral surgeon, stated that he gave treatment for all specific diseases of the blood. In the nineties Dr. A. H. Muedeking, who for some years lived in Owatonna, came annually with his "excellent white flint spectacles."

Up to the turn of the century and beyond, the numerous medicine shows, which had toured the country and all southern Minnesota as early as 1864, continued to thrive. The Wizard Oil Troupe, headed by "doctors," came at intervals over many years, giving concerts and selling Hamlin's Wizard Oil, which was said to cure everything from bunions to diphtheria. It was this company, in 1883, that caused Dr. W. J. Mayo, an earnest young physician just out of medical school, a moment of disillusion; no doubt other physicians in the region had similar experiences. Dr. Mayo had treated an old Irishman for lumbago, had received the patient's voluble thanks, and with some gratification had heard him tell Dr. W. W. Mayo that his son Will was a wonderful doctor. A little later Dr. W. J. Mayo saw his patient seated happily on the wagon of the Wizard Oil Troupe, proclaiming

that all doctors had failed and that he owed his complete relief from suffering to the magic of Wizard Oil. Later came Dr. T. J. Smith's traveling medicine show and that of a Dr. Laird. Among the many who came later were representatives of "Veno, from the land of the Rising Sun," and a group of two patent medicine vendors and two colored comedians who for a week gave daily and nightly entertainment at the corner of Zumbro Street and Broadway in Rochester. One of the last of the larger medical shows was that of the Kickapoo Medical Company that toured all parts of the country giving entertainments and selling medical wares that were guaranteed to cure all ills. This company laid stress on the removal of tapeworms: In the *Rochester Post* of May 24, 1895, was a statement that Dr. G. Peterson of the Kickapoo Company had removed a tapeworm sixty-four feet long from a local woman, one Mrs. Johnson.

Patent Medicines.—Patent medicines were at their zenith in the second half of the nineteenth century in Olmsted County as elsewhere. Although traveling vendors and medical shows dealt extensively in certain of these preparations, they handled a minimal portion of the concoctions that were available to the public. Scanning local newspapers of the period from 1856 to 1900 gives the impression that the manufacture and sale of patent medicines and of bitters was a leading business of the time, so numerous and so extensive were the advertisements. Some druggists, even though they solicited the prescription business of physicians, gave much space in their stores to patent medicines, which no doubt were highly profitable merchandise. These druggists became wholesale agents for the manufacturing companies, and if the agents did not advertise the medicines, the manufacturers did. After local railroads had quickened communication and shipping, the distribution of patent medicines increased greatly and the advertisements so burgeoned as to overshadow announcements of even such offerings as the new labor-saving farm implements, among which were seeders, cultivators, mowers and reapers. From almost any issue of any newspaper, especially during the sixties and seventies, the highly descrpitive names of hundreds of preparations could be taken. Often the advertisers ended the long lists with the line, "And a host of other patent medicines too numerous to mention." There were pills and "health restorers" for the relief of ailments of mankind; painkillers, cathartics, and diuretics, and preparations, whose uses were hinted with ponderous delicacy, for treatment for venereal diseases; remedies for catarrh and compounds for pulmonary and respiratory afflictions of all kinds; plasters, liniments, balms, balsams, ointments, soothing syrups, hair restorers and aids to beauty.

There were bitters without end. A few were Dandelion and Wild Cherry Bitters, which came from Iowa, Hostetter's Bitters, Swain's Bourbon Bitters, Roback's Bitters, Plantation Bitters, Hoofland's German Bitters, and Wright's Health Beverage or Tonic Bitters. Dr. Walker's California Vinegar Bitters were recommended by the maker "for everything from rheumatism to intermittent fever—all dyspepsias, skin diseases, pin, tape and other worms. In fact, Dr. Walker offers $100 reward for an incurable case, provided bones are not destroyed by mineral poison and vital organs not wasted beyond repair" (Rochester *Federal Union,* May 20, 1870). From Goodhue County, Minnesota, came A. J. Clark's Red Wing Stomach Bitters. Rochester, Olmsted County, was the home of the Gopher State Bitters, which were manufactured by Dr. W. A. Hyde, in 1868, and were marketed widely for a time by Daniels and Company of the city.

In immediately hampering legitimate medical practice, the itinerant practitioners, the quacks and impostors, and the patent medicine manufacturers and vendors ultimately advanced it. Words from the *Golden Bough,* on magic and

the black art, might be adapted to apply to quackery in medicine, to say that quackery paved the way for science, that if the irregular practitioners did much evil, they were the source of much good, and that if quackery was the child of error it yet became the mother of freedom and truth.

The Growth of Medical Practice in Olmsted County

Someone said, "Disease is from old; nothing about it changes. It is we who change, as we learn to recognize what was formerly imperceptible."

Some of the early practitioners of medicine in Olmsted County, as elsewhere, were of the type who said, in effect, with Dr. John Lettsom

> When patients to me do apply,
> I physics, bleeds and sweats 'em;
> If after that they choose to die,
> What's that to me, I let's 'em.

The best of the early physicians, however, dignified in manner, formal in dress, competent practitioners in their day, came with courage and the spirit of truth, and with a tolerant and generous attitude toward the people with whom they lived. Some of them apparently felt, as James T. Adams has said of pioneers, that the glory of the epic is lost without the dream. Some of them became projection points upon the level of their times.

Pioneer settlements of southern Minnesota were scattered and the early physicians few, so that the practitioners of each county traveled long distances, often into neighboring counties, to care for the sick. They made their rounds, in town and on their long rural "rides," on horseback or in horse-drawn vehicles. It is impossible to overemphasize the inconveniences they bore in lack of facilities and of communication between town and country, and the hazards of roads and weather that they overcame. Not until the autumn of 1898, when conditions of travel had improved somewhat, did an automobile enter Olmsted County. A banker of Spring Valley, Fillmore County, drove his car to Rochester, making the trip of thirty miles in two hours and fifteen minutes, including all stops, and stops were frequent, "to prevent teams on the road from becoming frightened." The automobile, which was made in Cleveland, had a gasoline engine of five and a half horse power, situated under the seat, and ran "easily fifteen miles an hour on any kind of road. It cost just $1,000 and is a luxury few will care to acquire" (*Record and Union,* August 28, 1898). The *Olmsted County Democrat,* however, was more optimistic and predicted that the machine might in time oust the horse: "Dr. C. H. Mayo was much interested in examining this means of locomotion and may conclude to purchase a horseless carriage for himself." As a matter of fact, Dr. C. H. Mayo, the first physician in Olmsted County, certainly in Rochester, to own an automobile, became the possessor of a steam-propelled machine in January, 1900.

The facts that intercounty practice became general and that physicians of different sections began to summon one another in consultation led ultimately to the regional organization of medicine. Although in the early period professional amity did not exist as it does today, it has become apparent that the best qualified physicians respected one another, that they were increasingly aware of the imperfection of medical education, and that they early began to work together for the good of the public and the honor of the profession.

Medical education, even in the best tradition of the early times, was faulty. The more conscientious and able of the regular profession tried to improve their knowledge by adding to their treasured libraries the best of medical textbooks and

medical journals. Accent was not placed publicly on study, however, because it was assumed by the laity of average communities that physicians were born, not made, and that if a practicing physician had to study his profession, he was not good at it. The lives of most of the early physicians were complicated by this attitude of the people, by rugged physical conditions of living, by insufficient means and by having a clientele in the same economic predicament as themselves. In the first decades of Minnesota it was an accepted thing that physicians should have more than one remunerative occupation in order to make a living for themselves and their families. In practicing their profession they were hampered by the limitations imposed on them by lack of scientific knowledge of medicine and by meagerness of equipment. The pharmacopeia was small, anesthetic agents were few and imperfectly understood, mechanical aids that a few decades later would be essential were unknown. One outstanding pioneer physician and surgeon (David S. Fairchild) said, long afterward, "The best we could do was make a diagnosis as to the nature of the disease and select a medicine which experience had shown to be the best suited to the case. We knew nothing about germs or antiseptic methods, so we had no worries on the score of blood poisoning . . ." The concept of disease and of medical treatment was one of gradual change.

For about twenty-five years in its early history, Minnesota, because of its bracing climate, was widely known and advertised as a natural sanatorium for persons suffering from consumption (tuberculosis), and there were consequently among the early settlers many sufferers from pulmonary disease and many who succumbed to it. In the *Rochester City Post* of March 24, 1866, there was quoted a communication from a Saint Paul correspondent to the *New York Herald* for the benefit of invalids coming west:

> Those who take the least medicine and are farthest from society and influence of other invalids, progress most rapidly. . . . Do not start from home before the middle of April because there is no certainty of the Mississippi being open for navigation before that period. A journey overland from La Crosse in the spring of the year is no trifling affair, even for persons in full enjoyment of health. Besides that, the March winds are no better than they might be, and it would be better for the patient to avoid them, perhaps, and wait patiently for the river to open, rather than run the risks incident to a long journey in stages.

By 1870 the rigors of winter were conceded to be a drawback for invalids, and there was an annual exodus of such persons to Colorado, California and other states of more equable climate. By 1874, although the healthful year-round climate still was stressed, the advantages of summer in Minnesota were being emphasized. In this year Andreas said of Olmsted County, ". . . . the uniformity of temperature makes the county an asylum for those who are afflicted with pulmonic diseases. It is also free from malarial influences, and is probably, with the rest of the state, one of the healthiest countries in the world. It is situated on the open prairie, it has in summer the full advantages of the refreshing breezes prevalent at this time, and year by year it is more and more becoming the summer resort of those who seek relief from the oppressive heat of a southern or less favored locality."

There were especially unfavorable seasons, however, and in Rochester the newspapers abounded in comments on adverse weather and the train of ailments that came with it. The winter of 1856, which has come down in history as one of the severest seasons ever known in the southern part of the state, brought loss of life to many who were not inured to such rigors. Most of the earliest homes furnished inadequate shelter. Even in the average winter, children who trudged to district schools, and all who were obliged to travel the roads—teachers, physi-

cians, preachers and farmers—suffered from exposure. The winter of 1863, however, was open, "not a day of sleighing all winter," and there were much typhoid fever and a variety of respiratory affections. An editor exclaimed, "Give us back old time Minnesota winter with its equable, dry, bracing and exhilarating climate, and typhoid and tendency to indisposition will vanish; this was a year of high mortality from diseases of various kinds." In the normal winter of 1865 there was little sickness; the general health, it was declared, had never been better. And so it went.

Smallpox was prevalent annually, as were other contagious diseases, and editors warned, "Let vaccination be thoroughly attended to." Certain local physicians, among them the Drs. Cross, advertised, as early as 1860, pure vaccine virus that they would "insert in individuals or whole families." In 1864 the death from smallpox of a soldier in Rochester, who had been quarantined in a none too suitable house on the outskirts of the city, led to acrimonious exchange between newspapers of Chatfield and Rochester, and to widespread publicity, because regional papers copied the items. A Chatfield editor declared that the patient had frozen to death and that burial had been made in a swamp by tapping the body down with a pile driver: "If one half of it is true, every heathen in that delectable village deserves an attack of varioloid at least." The Rochester editors denied the allegation with bitterness, and when smallpox broke out in Chatfield, made the most of their opportunity and offered to lend the alleged pile driver for disposal of possible victims.

Early Concept of Disease and Medical Treatment.—In the early decades in the county the popular concept of health and disease and of medical treatment was reflected by editorial comments, and inasmuch as there were few if any contrary expressions published by physicians, it is assumed that the concept expressed was theirs also. In the summer of 1865 there was much discussion of the enormous number of mosquitoes, and of prevailing cholera morbus, and there were cautions about diet, exposure and overexertion. Fear was expressed that as a consequence of the wet summer the autumn would be unduly sticky, but apparently no connection was suspected between the summer, the mosquitoes and sickness. It was said, a few years later, and the opinion was held by physicians, that malarial diseases originated in poisonous emanations from the earth, which embodied a subtle principle termed malaria, which was constantly rising, like an imperceptible gas, poisoning the air and generating disease, such as chills, fever, pneumonia, diarrhea and dysentery; and that the low temperature of the Minnesota winters effectually destroyed any malaria that might lurk in the soil ready to spring forth in warm weather. There were statements about the salubrious effect of perturbation of the air by wind, moisture being a powerful agent in generating diseases and the main vehicle of malaria and other atmospheric poisons, which clung to the moisture or were held in solution by it.

(To be continued in the October issue)

President's Letter

THE DEFENSE OF ETHICS

DEFINING medical ethics would be as difficult for most patients as reciting the Bill of Rights from memory; yet their very lives may depend on this volume of recorded traditions and ideals and the dictates of a group conscience. Perhaps it is our fault that medical ethics has not assumed a greater significance to the people we serve. Working 10 or 12 hours a day to cure sick minds and bodies, we have failed to think of the broader aspects of our relationship with the public.

While we have lived in this way, taking a pardonable satisfaction in the brilliant health records of our state, the symptoms of a great national illness have been developing and not until very recently has the doctor become aware of them. Our newspaper friends have criticized us—in their usual forthright and constructive way—accusing us of being "asleep at the switch" and "living in an ivory tower."

Now we have become militant. We must be. For we have the health and safety of millions to protect. We are trying, with every means at our command, to warn the public that government control of medicine would steal the American heritage of medical skill, medical discoveries and medical care. Government control would rob the patient of his right to choose a family doctor, would make public records of the confidential information that comes to a doctor by virtue of the trust and faith his patient has in him. Government control would increase an already gigantic tax burden and reduce the American standard of living, at the same time that it is lowering the quality of medical care, retarding medical research and building up a huge bureaucracy that will not belong to the people, as the ideal government does, but will enslave them.

In defense of the ethics of private practice, we have decided to purchase space in our community newspapers to inform the public what we believe would be the results of government control. We felt that we had as much right to be heard as, for instance, manufacturing plants and labor unions who buy space in newspapers to inform the public of their attitudes and policies.

For that decision, we have been attacked by certain groups who claim that we are "bribing" the press.

The idea that the newspapermen of our state could be bribed is ridiculous to anyone except editors of propaganda sheets not worthy of the name "newspaper" and power-hungry political job seekers, who hope, at any price, to cement their own futures in the vast superstructure of clerks, supervisors, investigators and tribunals that would mount with the passage of a compulsory health insurance bill.

The newspapermen and women of Minnesota, highly trained and educated, dedicated to the principles of freedom that the constitution guarantees the press, and imbued with a sense of community responsibility that is unequaled in any other profession, have placed Minnesota high in the ranks of journalistic excellence. Minnesotans have confidence in their newspapers because they know they are receiving, in the news columns, an objective recounting of the day's or the week's events. The editorials they know to be the editor's own carefully thought out opinion and interpretation of those events. What better media than newspapers like these could doctors of Minnesota select for conveying their own special message to the public?

It is true that personally and professionally most editors in Minnesota are opposed to any system of compulsory health insurance and they speak out against this threat in no uncertain terms. But editors have other causes to defend, other issues to consider. in their papers and no matter how deeply they feel about government domination of medicine we cannot expect that they will sit down and write an editorial on that subject every day or every week. Yet, as doctors, we regard this issue as one of our greatest responsibilities, and we want to bring the facts before the people as often as we can; hence, by direction of the House of Delegates of the Minnesota State Medical Association, our medical societies are now permitted to buy advertising space to tell their story.

In defending the spirit and letter of our ethical code in this way, it would be absurd to suppose that we were trying to destroy the ethical code of newspapers which, in its spirit of freedom and service to humanity, so closely parallels our own.



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

HOSPITAL, SURGICAL AND MEDICAL INSURANCE

ON RECOMMENDATION of the Council on Medical Service of the American Medical Association, the House of Delegates in June, 1949, decided that the Associated Medical Care Plans, which is an organization made up of many medical care plans throughout the country, should be absolutely independent of the AMA, but that the AMA should continue to approve or disapprove medical insurance policies offered by the plans sponsored by the various State Medical Associations and those offered by the various insurance companies. The House of Delegates also stressed the importance of the AMA (and that means all of us) giving all the publicity possible to the desirability and, in fact, necessity for this type of insurance for everybody. This necessity applies to hospital insurance just as much as to medical care insurance.

This idea of the necessity to insure against the high cost of so-called catastrophic illness is not new. This instigated the formation of the Blue Cross some fifteen years ago and the Blue Shield just a few years ago. The Blue Cross now protects over 34,000,000 persons, and the Blue Shield over 11,000,000. That the public recognizes the need for such insurance is indicated by the fact that at present nearly 61,000,000 of the population are protected by voluntary hospital insurance of all types, over 34,000,000 by surgical, and nearly 13,000,000 by medical voluntary insurance.* The growth of medical insurance during its first years of existence has been even more rapid than was that of hospital insurance.

It is highly important that both these types of sickness insurance should be expanded to the limit. The overall cost of medical care so provided is much less than a tax-supported program would be and does not disturb the doctor-patient or hospital-patient relationship in the least. The Blue Cross and Blue Shield plans are conducted on a non-profit basis with a low overhead cost, and insurance of this type offered by many insurance companies is written on a basis where the cost is controlled by the actual experience of the class insured. Rates and benefits offered by the Blue Cross and Blue Shield are comparable with the indemnity policies offered by the many insurance companies in the field. However, Blue Cross offers full service benefits with the exception of room allowance and x-ray, and Blue Shield provides full service benefits to low income groups of people.

The field covered by the Blue Cross in the past has been limited to groups of employed individuals. Provision has been made for dependents of policyholders reaching the age of nineteen to apply for individual policies. By so limiting the policyholders to employed individuals the Blue Cross has been able to keep its rates low and at the same time insure against such hospital costs as operating room, anesthesia, laboratory service, surgical dressings, drugs, serums, intravenous solutions, liver extracts, glandular products, physiotherapy, oxygen, electrocardiography and basal metabolism—items which can easily mount up—in addition to the room cost. The need for increasing the former $5.00 provision for room cost in view of the marked rise in room rates in recent years has now been met by a slight increase in policy rates of five cents a month for individual policies and twenty-five cents a month for family policies for each additional dollar in excess of $5.00 up to $9.00. Thus a contract providing $9.00 a day for hospital room in addition to the other service benefits of the contract costs $1.45 a month instead of $1.25 for the $5.00 room allowance contract plus other service benefits for a single subscriber and $3.75 a month instead of $2.75 for the family subscriber. The Blue Cross is seriously considering issuing a non-group contract in the near future which will be offered to individuals whether they are employed or not, particularly to those who are not now able to enroll through a group. The cost of this contract will necessarily be somewhat higher than group rates.

The Blue Shield, for the remarkably low cost

*A Survey of Accident and Health Coverage in the United States. Prepared by The Survey Committee of the Health Insurance Council, August, 1949.

of $1.00 monthly for the individual and $2.25 for the family, provides surgical, obstetrical, and limited medical care which constitutes complete payment of the doctor's fee for individuals with an income of less than $2,000 a year or a family with less than $3.000 a year. To those with a greater income, insurance payments are applied to the doctor's bill. So far, the Blue Shield insures only groups but is seriously considering issuing individual policies in the near future.

There are probably thirty insurance companies licensed in Minnesota that write hospital, surgical and medical policies. They write not only group policies but individual policies on an indemnity basis. The rates offered are low and policies offered meet the present high cost of hospital beds —up to $9.00 a day. A prospectus issued by one insurance company offers a family policy covering $5.00 a day on a hospital bed, surgical and limited medical care for $84.00 a year. Policies vary in cost and benefits and should be read before they are purchased.

DIHYDROSTREPTOMYCIN

ALTHOUGH streptomycin is a valuable antibacterial agent its neurotoxicity has impaired its usefulness. This has been especially true when streptomycin has been used in the treatment of tuberculosis and other chronic diseases for which the drug has to be administered for several weeks or longer. The discovery of a new drug with the antibacterial potency of streptomycin but without its neurotoxicity, or even with a decreased neurotoxicity, would be a step forward.

Dihydrostreptomycin, a chemical derivative of streptomycin, which recently has been made generally available, seems to satisfy these requirements. *In vitro,* studies have shown that dihydrostreptomycin has about the same activity as streptomycin against most micro-organisms, especially Mycobacterium tuberculosis. Unfortunately, those tubercle bacilli which are resistant to streptomycin are equally resistant to dihydostreptomycin. Several groups of ingestivators have found streptomycin and dihydrostreptomycin to be equally effective in the treatment of experimental tuberculosis in various species of animals due to strains of M. tuberculosis that are sensitive to streptomycin. Likewise, it has been shown that dihydrostreptomycin has no demonstrable effect on experimental tuberculosis due to tubercle bacilli that are resistant to streptomycin. Up to now, too few patients with tuberculosis have been treated with dihydrostreptomycin to justify any final conclusions regarding the therapeutic efficacy of this drug as compared with that of streptomycin. However, most of the workers who have studied this problem are of the opinion that there is no essential difference.

It is the lesser neurotoxicity of dihydrostreptomycin that makes it an improvement over streptomycin. Gram for gram, dihydrostreptomycin less frequently causes damage to the vestibular apparatus than does streptomycin and, when vestibular damage does follow use of dihydrostreptomycin, it comes later in the course of treatment, is less severe, and is less likely to be permanent. However, it should be emphasized that dihydrostreptomycin can cause the same toxic effects as streptomycin and that dihydrostreptomycin should be used with caution. This is especially true if renal function is poor, as dihydrostreptomycin, like streptomycin, is excreted through the kidney. In the presence of poor renal function, an apparently safe dose of the drug may produce a dangerously high concentration of dihydrostreptomycin in the blood. Like streptomycin, dihydrostreptomycin may occasionally damage the auditory function and all patients who are being treated with this drug for prolonged periods should be carefully observed for evidence of such damage. Apparently the damage is usually in the higher frequencies and is of little clinical significance when it does occur.

Dihydrostreptomycin has proved to be of unique value in the treatment of patients who react to streptomycin with drug fever or skin rashes. Such patients have been treated with dihydrostreptomycin without recurrence of the allergic manifestations.

D.T.C.

DEFEAT OF REORGANIZATION PLAN NO. 1

IN AN EDITORIAL which appeared in our August issue, we gave a brief analysis of the report of the task force of the Hoover Commission on health activities of the federal government. We mentioned that in a supplemental report the task force strongly recommended that health activities of the government be made a seperate department of the government headed by an M.D., with training for such a position. This

step has been favored by the medical profession for years.

President Truman submitted to Congress what is known as Reorganization Plan No. 1, providing for a Welfare Department to be headed by Oscar Ewing to include Social Security, Education and Health activities of the federal government. This would include not only the Public Health Service but numerous additional health activities now conducted by other departments. The health activities of the government would thus be under the control of the Secretary of the Welfare Department.

The defeat of Reorganization Plan No. 1 by the Senate on August 16, is a demonstration of what a determined medical profession can accomplish when convinced of the justice of their cause and the need for action.

Senator McClellan, Democratic Senator from Arkansas, was chairman of the Senate Committee which conducted the hearings of the committee and deserves much credit for the conduct of the hearings. A group of physicians in a number of western states deserve the credit for instigating the campaign in opposition to the proposed legislation. Dr. Brookshire, Secretary of the Arkansas State Medical Association, in conjunction with the presidents of the Texas, Oklahoma and Arkansas State Medical Associations, called a meeting in Denver of representatives of some western states. The upshot of this meeting was that all the State Medical Associations were called upon to send representatives to Washington to do what they could to block Plan No. 1. Executive Secretary R. R. Rosell was Minnesota's representative. Representatives from Arkansas, Oregon, California, Louisiana, Texas, Oklahoma, Kansas, Virginia and Minnesota braved the summer heat of Washington to explain to Senators in person the undesirable provision of Plan No. 1, that it is not what the medical profession nor the Hoover Commission had been advocating and the danger of putting an out-and-out socialist at the head of a department in which federal medical activities would have no chance for independent action. As a result, Reorganization Plan No. 1 was defeated in the Senate by a vote of 60 to 32.

As soon as the physicians throughout the country were appraised of the situation, a flood of telegrams was sent the Senate Committee members. It is well recognized that communications to our representatives in Congress have their effect, and this expression of opinion doubtless also had some effect. The Senate committee took action in opposition to Plan No. 1, and this action was confirmed by the Senate. Thanks of the profession go especially to the representatives of the State Medical Associations who at some sacrifice went to Washington and were apparently successful in obtaining the defeat of a bill, whose passage in some quarters seemed a foregone conclusion.

Our appreciation should be extended not only to Senator McClellan of Arkansas, but also to Senator Fullbright of Arkansas, Senator Hunt of Wyoming, and Senator Taft of Ohio. Not a little thanks is due to that little fire-eater, Marjorie Shearon, editor of *American Medicine and the American Scene* which she publishes on her own in the interest of private enterprise and honesty in government. Regrettably, our Senator Humphrey felt himself pledged to vote for Plan No. 1, and led the fight for the bill not only before the Senate Committee but on the floor of the Senate.

The Hoover Commission, after prolonged study, has made its report and has recommended that a separate Medical Department be formed, to be headed by an M.D. This meets the hearty approval of the medical profession and should be done.

MANAGEMENT OF DISEASES OF THE THORAX

(Continued from Page 902)

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WELFARE AND PUBLIC HEALTH LEGISLATION

WELFARE LEGISLATION
1949 Session

Child Welfare

(1) *Chapter 39*—Amends Minnesota Statutes 1945, Section 260.01, to provide treatment facilities for a child "who because of erratic, unstable, or abnormal conduct appears to be emotionally disturbed and is, therefore, in need of psychiatric study, care, and treatment, and whose parents or guardian are unwilling or unable to provide him with such necessary care and treatment";

Section 2 of the amendment provides that these facilities shall be established at the Anoka State Hospital or the Hastings State Hospital.

(2) *Chapter 40*—Amends Minnesota Statutes 1945, Sections 256.01 and 393.07, authorizing the Director of Social Welfare to designate such county welfare boards as he may select to act as his agent in the placement of DSW wards in adoptive homes or for foster care.

(3) *Chapter 736*—Creates a commission to study the laws and court organization of Minnesota relating to juvenile courts, divorce, annulments, separate maintenance adoption, desertion, and non-support. The members of the Commission shall be appointed by the Governor and shall include leaders in the legal and social welfare professions, and members of the State Legislature.

(4) *Chapter 227*—Amends Minnesota Statutes 1945, Sections 257.03 and 257.04 to clarify the language requiring that any person placing, or who assists in placing a child in a permanent foster home must notify the Director of Social Welfare.

(5) *Chapter 400*—Amends Minnesota Statutes 1945, Section 259.03, as amended, to provide that in the case of the adoption of a minor who is illegitimate, consent must be had of his mother, and if she be under the age of 18 years, of her parents or guardian.

(6) *Chapter 466*—Amends Minnesota Statutes 1945, Section 144.176, regarding the adoption of a person born in a foreign country to permit the district court, upon evidence presented by the Division of Social Welfare from information secured at the port of entry, to make findings upon which the state registrar is to prepare a birth certificate.

(7) *Chapter 21*—Amends Minnesota Statutes 1945, Section 257.05 to permit the Director of Social Welfare, at his discretion, to authorize persons bringing children into the state for purposes of adoption to file a written guarantee of responsibility in lieu of the usual bond.

(8) *Chapter 32*—Amends Minnesota Statutes 1945, Section 256.93 by permitting the Director of Social Welfare to accept guardianship of all personal property of wards committed to his care, removing the previous limitation of $1,000.

Public Assistance

(1) *Chapter 606*—Amends Minnesota Statutes 1945, Section 256.74, Subdivision 1, as amended by Laws of 1947, Chapter 192, to provide that there shall be no maximum limit upon the amount of assistance in ADC cases, effective July 1, 1949. (The law now states only that the grant shall "provide such child with a reasonable subsistance compatible with decency and health.")

(2) *Chapter 677*—Amends Minnesota Statutes 1945, Section 256.15, Subdivision 2, as amended by Laws of 1947, Chapter 530, to increase the maximum Old Age Assistance grant to $55 per month effective July 1, 1949, and to $60 per month if and when the Federal government increases its financial participation in the Old Age Assistance program.

(3) *Chapter 420*—Amends Minnesota Statutes 1945, Sections 261.15, 262.01, 262.07, 262.13, 263.01 and 263.03, to make permissive the payment of poor relief in cash.

(4) *Chapter 341*—Amends Minnesota Statutes 1945, Section 256.36 by repealing provision that when an Old Age Assistance recipient moves to another county, the county of original grant may bill the county of present residence for one-sixth of the amount of any increase granted, and reinstates previous law so that county originally making the grant is responsible for full amount of the grant regardless of where recipient resides.

(5) *Chapter 534*—Amends Minnesota Statutes 1945, Section 256.51 as amended to remove the requirement that applicants for Aid to the Blind be more than eighteen years of age. (No limit as provision now stands.)

(6) *Chapter 711*—Amends Minnesota Statutes 1945, Sections 256.51 and 256.53 as amended by Laws 1947, Chapter 343, Sections 1 and 2. The personal property limitation for an applicant for Aid to the Blind is defined as ". . . not more than $500 for a single person or $750 for a married couple. Personal property shall include stocks and bonds, bank savings, farm machinery and livestock, land contracts, mortgages and cash value of life insurance policies. The first $500 for a single person, or $750 for a married couple, of sale value of clothing and household goods shall be disregarded in determining how much personal property is owned."

The maximum funeral allowance for deceased recipients of Aid to the Blind is increased to $150.

(7) *Chapter 22*—Repeals Minnesota Statutes 1945, Section 248.07, subdivision 6. This section placed the administration of vocational rehabilitation activities for the blind in the Children's Bureau, a state administrative unit which no longer exists. (Vocational rehabilitation for the blind is administered in the Public Assistance Unit of the Division of Social Welfare.)

(8) *Chapter 509*—Amends Minnesota Statutes 1945, Section 261.07 to provide that in determining the legal settlement of a poor person, any time during which that person was committed to a public institution or hospital in another state shall be excluded in computing the period of absence from this state.

Tuberculosis

(1) *Chapter 731*—Amends Minnesota Statutes 1945, Sections 376.31 and 376.33 to increase state aid for the care of non-paying patients in county tuberculosis sanatoria to a maximum of $7.50 per week.

Like benefits are provided for these counties not having

Prepared by Division of Social Welfare, April 28, 1949.

a tuberculosis sanatorium (using the facilities of the state sanatorium) through monies included in the Division of Social Welfare Appropriations Act, *Chapter 744* (H. F. 1835).

(2) *Chapter 96*—Provides that in tuberculosis sanatorium districts in which there is no longer a need for a sanatorium to care for persons living within the county or counties comprising the district, the sanatorium commission and the board or boards of county commissioners of the district may, with the approval of the Director of Social Welfare, discontinue the operation of the sanatorium, and sell or lease the property pertaining thereto.

(3) *Chapter 558*—Amends Laws of 1947, Chapter 616 for the purpose of clarifying the language regarding the responsibility of the state toward TB sanatorium employes who contract tuberculosis. (ex: amendment defines "contracts tuberculosis").

(4) *Chapter 116*—Amends Minnesota Statutes 1945, Section 376.19 to permit the construction, improvement and maintenance of roads terminating at a county tuberculosis sanatorium (Not to exceed 5 miles from the site).

Miscellaneous

(1) *Chapter 744*—The Division of Social Welfare Appropriations Act, provides in part that state aid for welfare financing shall be extended to those counties in which the real and personal property valuation is less than $7,000,000, and whose mill levy for welfare purposes exceeds the state average by 50 per cent or more but is insufficient to meet the county's welfare costs. Counties hereafter transferring monies out of their welfare funds are excluded from benefits. (Information as to the exact formula will be sent at a later date.)

(2) *Chapter 704*—Amends Minnesota Statutes 1945, Section 256.01 to empower the Director of Social Welfare to act as co-ordinator of activities relating to the Displaced Persons Program in Minnesota. This authority is to expire on June 30, 1951.

(3) *Chapter 681*—Amends Minnesota Statutes 1945, Section 350.11 to allow employes of the State and its political subdivisions a maximum of six cents per mile for the use of privately owned automobiles in the performance of official duties, effective July 1, 1949, and extending until July 1, 1951.

(4) *House Resolution Number 30*—Directs the Legislative Research Committee to undertake a study of the financial and social problems of needy Indians and the intergovernmental relationships between the various agencies working with them. The Committee's report is to be submitted at the next regular session of the Legislature.

In addition to the foregoing, a resolution was passed authorizing a committee of the Legislature to go to Washington to explain to responsible federal officials the problems particularly financial, of Minnesota Indians, and to urge the federal government to take steps to more adequately meet their needs. This Committee was appointed, and it completed its assignment in Washington early in the legislative session.

(5) *Chapter 618*—Amends Minnesota Statutes 1945, Chapters 261, as amended, 262, and 263; and amending Minnesota Statutes 1945, Section 256.01, Subdivision 2 to enable the Director of Social Welfare to participate in agreements with the federal government if and when the Congress makes available new grants-in-aid for public assistance or other welfare purposes. (The primary purpose of this act was to permit Minnesota to take advantage of federal funds in the event that the Congress extends federal aid for general relief to the states before our next legislative session. However, the county system relief bill failed to pass.)

(6) *Chapter 228*—Amends Minnesota Statutes 1945, Section 256.02 to transfer all powers and duties of the Director of Social Welfare regarding the inspection and investigation of prisons, jails, and lockups to the Director of Public Institutions.

(7) *Chapter 81*—Permits courts to appoint a psychologist to assist the two licensed doctors in the examination of allegedly mentally deficient persons.

(8) The Legislature also made enactments designed to improve mental hospital conditions and to develop a mental health program in the state. Details regarding these acts may be obtained from the Division of Institutions.

Youth Conservation activities were expanded. Specific information may be secured from the Youth Conservation Commission.

Resolutions

The Legislature also passed the following joint resolutions pertaining to welfare. These are merely legislative recommendations to the Congress, and are in no sense enforceable:

(1) *Resolution No. 7*—Memorializes the Congress of the United States to amend the Social Security Act to permit the federal government to share in grants paid to persons residing in public institutions.

(2) *Resolution No. 2*—Memorializes the President and the Congress of the United States to provide for the continued operation of the Indian school at Pipestone, Minnesota, and to reopen its hospital, which had already been closed.

(3) *Resolution No. 3*—Memorializes the Congress of the United States to amend the immigration laws to permit the adoption of European war orphans by American families.

PUBLIC HEALTH LEGISLATION
1949 Session

Animals, Use of—In promotion of scientific research and instructions in animal and public health. Live Stock Sanitary Board made the licensing agency. Chapter 195—S.F. 834, App. 3/26/49.

Boats, Safety of—Equipping with detachable anchor lines and elimination of annual issuance of metal boat tags using instead a tag to remain on boat until sold, taken out of service, or otherwise removed. Chapter 655—H.F. 1005, App. 4/25/49.

Cancer, Statistical Research—Authority given to Board to engage in; confidentiality of reports. Chapter 350—S.F. 1085, App. 4/9/49.

Prepared by the Minnesota Department of Health.

Civil Service—Allocations of positions in. Civil Service Director to make allocations where organizational structure changes in an agency, provides manner of appeals from allocations, et cetera. Chapter 646—S.F. 1081, App. 4/23/49.

Hospital Superintendents Registration Law—Moves up "grandfather clause" in 1947 law to October 1, 1949. Chapter 93—S.F. 121, App. 3/7/49.

Hospitals and Sanatoriums—Changes levy by boards of county commissioners for maintenance of county TB sanatoriums from three to five mills (Sec. 376.20). Chapter 29—S.F. 245, App. 2/18/49.

A Concurrent Resolution, No. 2—S.F. 286, memorializing President and Congress to continue operation of Pipestone Indian School and re-open Hospital at the school. App. 2/17/49.

With approval of Director of Social Welfare, sanatorium Commission and county board by resolution may cease operation of a sanatorium. Chapter 96—S.F. 319, App. 3/7/49.

Village with municipal liquor store may, with approval of voters, contribute "from village liquor dispensary fund toward the construction, maintenance and operation of a community hospital . . . for a period of four years thereafter . . . to any duly incorporated nonprofit hospital association not to exceed $4,000 . . . in any one year for construction and maintenance . . . and not to exceed $1,000 in any one year for the operation thereof; and the hospital shall be open to all residents of the community on equal terms." Not applicable where average net earnings of store are less than $8,000. Chapter 146—S.F. 194, App. 3/21/49.

Counties, cities and villages may accept gifts "to aid in building, acquiring, equipping and maintaining public hospitals. . . ." Chapter 152—S.F. 464, App. 3/21/49.

Hotels—Fire prevention and fire protection duties transferred from Hotel Inspector to Commissioner of Insurance. Chapter 469—H.F. 1606, App. 4/16/49.

Indians—Joint Resolution: H.F. 1641: LRC to study problems of Indians; passed House 4/13/49.

Local Health Units—Amended (1) to provide for less than full time health officer, (2) to impose a one-mill tax limitation, (3) to require unanimous vote of county commissioners of a county which contains a city of first class if majority of county commissioner districts lie within such city, and (4) health officer to have approval of State Board of Health. Chapter 405—S.F. 352, App. 4/14/49.

Mental Health—The "Mental Health Policy" Act, makes the Division of Public Institutions the Mental Health Agency. Chapter 512—H.F. 1397, App. 4/20/49.

Mosquitos—Five per cent of voters may authorize organization of mosquito abatement districts; one mill limitation; Conservation and Agriculture must approve. Chapter 404—S.F. 236, App. 4/14/49.

Narcotic Drugs—Amidone, is obemidone, and ketobemidone to be added to list of. Chapter 360—S.F. 706, App. 4/11/49.

Nuisances, Abatement of—In cases where a health officer abates a nuisance because the property owner failed to act, the previous law (Sec. 145.22) limited claim of the municipality against "any individual owner, or any one piece of property" to $25.00. This amount has been changed to $50.00. Chapter 80—S.F. 86, App. 3/4/49.

Pasteurization of Milk, Cream—No milk, or cream or *fluid* milk products to be sold unless pasteurized (casual sales on farms excepted). Chapter 403—S.F. 74, App. 4/14/49.

Retirement—State Employes—Amends Retirement Laws: (1) employes may retire at 58 after 20 years of service but retirement allowance shall be reduced ¼ of 1 per cent for each month that the employe is under age of 65. But allowance of any member entitled to 35 years' service credit is not subject to such reduction. (Sec. 12 (4)). Monthly allowance shall not exceed $150.00, (2) employe at retirement may elect to take lesser retirement allowance payable during lifetime with provision for surviving spouse to receive a reversionary annuity of not less than $120 per year "nor more than the amount of reduced retirement allowance to which the member may be entitled under his election." (Sec. 12 (5)), (3) on death of employe accumulated deductions are to be paid to beneficiary with interest 2% compounded annually. (Sec. 14 (1)), (4) tax levy for SERA fund to be increased from 4/10 to 8/10 of mill, (5) 60 per cent instead of 56 per cent of total deducted from salaries of employes paid from Federal grants is to be paid to fund (Sec. 8 (4)), (6) no deductions to be made from salaries on any amount thereof in excess of $4,800 in any fiscal year, (Not of $300 per month as at present) (Sec. 8 (2)), and (7) a state employe of five years or more who was a member of the Public Employes Retirement Association may obtain credit in SERA by paying to State fund sum equal to deductions at rate of 5 per cent on basis of salaries received from the political subdivision. Chapter 644—S.F. 853, App. 4/23/49.

Tuberculosis—To give health authorities means of isolating infectious TB patients who are recalcitrants; on Board of Health information that a person is in infectious stage county board may require law enforcement officer to visit and persuade person to enter a sanatorium. If persuasion fails, Board of Health can take matter to district court. A judge after hearing may direct the apprehension of person for confinement in a san. or hospital for examination to determine whether or not he is in infectious stage. Chapter 471—S.F. 14, App. 4/18/49.

Vital Statistics—Birth certificates for foreign born children adopted in Minnesota to be prepared where Court makes necessary findings; not to be evidence of citizenship. Chapter 466—H.F. 1560, App. 4/18/49.

We have learned that you cannot put a patient's mind in a cast. The great problem of the tuberculosis sanatorium is people leaving against medical advice. We have been foolish enough to expect patients to rest idly in bed and not to worry, but worries about families, jobs or money, go round and round in their heads until they decide to give up treatment and go home. Howard A. Rusk, M.D., National Foundation for Infantile Paralysis.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

DEFEAT OF PLAN NO. 1 IMPORTANT MEDICAL VICTORY

Rejection of President Truman's Reorganization Plan No. 1 by an informed and responsible Senate represents an important retracing step in the headlong flight toward socialism that has too long marked this country's course.

The Plan, which would have garnered control of health, education and welfare into the hands of Oscar Ewing, federal security administrator, was well on its way to passage before the American people were aware of its significance. Doctors from Arkansas, Oregon, California, Minnesota, Louisiana, Texas, Oklahoma, Kansas and Virginia rushed to the nation's capitol to warn the solons against casting a vote for this thinly veiled attempt to socialize medicine. Thousands of letters and telegrams from an aroused public weighted the scales of senatorial opinion.

In the Senate chambers the fight was led by McClellan and Fullbright, Democrats from Arkansas; Hunt of Wyoming, another Democrat; and Republican Senator Taft of Ohio.

Said Senator Taft, August 15:

"In view of his (Ewing's) public statements and actions, there can be no doubt that he would completely subordinate health and education to welfare. Doctor Parran resigned as surgeon general and Mr. Studebaker as head of the Office of Education, largely because no independence was left to them in their proper functions."

Despite Truman's unwavering championship of the Reorganization Plan, his assertion that it carbon-copied the Hoover recommendations (whereas the Hoover commission had recommended an independent United Medical Administration) and his last-minute summons to six Democratic Senators the day before the vote, nevertheless sixty Senators, twenty-three of them members of the Democratic party, voted against the plan.

A telegram from Dr. Elmer L. Henderson, president of the AMA, and Dr. George F. Lull, secretary and general manager, congratulated members of the "grass-roots lobby" for their part in the defeat of the plan:

"This victory was due to your magnificent support and intelligent efforts on behalf of the American people. The whole arsenal of bureaucracy and propaganda, including the White House itself, was unable to stop this triumph. It proves that the elected representatives of the people are responsive to enlightened opinion regardless of party politics or pressure. This is a significant test of medicine's strength in its fight to remain free."

HOOVER ADVOCATES "CRACKER BARREL" DEBATES

In the midst of the uproar, ex-President Hoover had a few incisive words to say on the occasion of his seventy-fifth birthday. "New government programs would require the spending of 75 to 85 per cent of people's savings," he pointed out, in an address broadcast from his alma mater, Leland Stanford University. "Sixty-one days of each year, we work for the government (in taxes)," he added, estimating an additional twenty days' pay a year from every individual if the government schemes go through.

Reminding his listeners that even now one out of every seven persons is a regular recipient of government money and that there is one government employe to every eight of the working population, Hoover warned that "We're on the last mile of collectivism."

He advised Americans to watch the manipulation of words and phrases to give them new meaning, citing as an example the deceptive phrase "deficit spending." In his opinion, debates like those traditionally held around the cracker barrels of the corner grocery stores would be wise. "In that atmosphere, phrases and slogans can be dissolved into common sense and intellectual integrity."

"BRIBERY" CHARGE TYPICAL OF SOCIALISM EXPONENTS

The exponents of socialized medicine are hard-pressed to find any grounds for their campaign

to put the health of the nation under government control. Just how desperate they are, as a rising tide of public opinion makes compulsory health insurance less and less likely, was evidenced by an August 9 publicity release from the Committee for the Nation's Health.

"The wording of the resolution (on advertising) made it clear that the sacrifice of medical ethics was being offered as an open bribe to the press of the state."

Thus was quoted Chet Paterson, executive director of the Committee for the Nation's Health, in speaking of the resolution on advertising passed by the Minnesota State Medical Association's House of Delegates, May 9.

The release was seized by Nathan Robertson of the *CIO News* who began his story:

"Minnesota doctors and newspaper editors have worked out a secret deal—under which the doctors have dropped their long standing ethical rule against advertising in return for a 'closer understanding with the press'—which amounts to bribing the press to fight President Truman's health insurance program."

Quoted as evidence of the "deal" was part of an editorial from the *St. Cloud Times* which advocated "a working arrangement between the medical profession and the press." The Committee for the Nation's Health pointed out that the editorial referred to the advertising arrangement; but the editorial actually went on to say:

"Moderate, well-timed and impersonal publication of news stories . . . would add to the reputation and professional stature of St. Cloud as a great medical center. This is more than medical advertising. It is an opportunity for public relations at its highest level."

This self-explanatory statement was omitted from the Committee's release, for obvious reasons.

Resolution a Guide

The much-maligned resolution actually was set up as a guide for activities that have been carried on for a period of more than ten years. As doctors know, most county medical societies permit the publication of small professional cards in local newspapers. Also doctors, as citizens of their communities, are expected to join in the promotion, by way of sponsoring advertisements which explain the campaign, of such drives as the Red Cross, Community Chest, et cetera. In recent years several medical societies have been buying space to explain the dangers of compulsory health insurance proposals.

A *Minneapolis Tribune* editorial phrased it:

"Action of the house of delegates clears the way for county medical societies to buy newspaper ads in order to present their side of the health insurance debate. This they have every right to do, as editors pointed out a state-wide medical-press conference April 8. Purchase of newspaper advertising space, however, in no sense constitutes a subsidy. Such space is available to all reputable advertisers, including doctors and medical societies or any other group wishing to support or oppose socialized medicine. Nor does purchase of advertising space include the right to dictate editorial policy of the newspaper."

"Deliberate Campaign"

The *Tribune* concludes its summation with:

"Just why the Committee for the Nation's Health . . . should want to hold up Minnesota doctors and editors as horrible examples to the nation is hard to understand. Its accusation has all the earmarks of a deliberate campaign to smear editors opposing Mr. Truman's health scheme."

The *St. Paul Dispatch* view parallels this, refers to the news release as "Based either on a deliberate effort to misrepresent or an inexcusable failure to understand. . . ."

Editorial wrath was boiling into print all over the state as the Committee's ridiculous charges became circulated. Among the more vehement was the *Maynard News* which stated:

"There seems to be no limit as to how far the CIO leadership will go to set one class against another in order to accomplish certain political and economic objectives.

"The same clique of rabble rousers that protest so loudly against race prejudice are energetically promoting class prejudice.

"The medical men and the editors of Minnesota's newspapers are the latest targets for their poison pen activities."

* * *

"Almost without exception, the editors of Minnesota are opposed to any legislation which will result in socialized medicine. They do not need bribes to prompt them to editorialize against compulsory health insurance or socialized medicine. They have received no bribes!

"The insinuation of the CIO *News* is an insult to the editorial and medical profession and will long be remembered."

AMA SCORES MISUSE OF ITS 1939 STATISTICS

One of the most frequently repeated assertions in the tottering defense of compulsory health insurance is a twisted version of 1939 American Medical association statistics on ability to pay for medical care. The misrepresentation appears this way in Ewing's *The Nation's Health:*

"As long ago as 1939, the American Medical association estimated that an income of $3,000 a year was not adequate to pay the costs of a major or chronic illness. Since then, the consumers price index has risen approximately 75 per cent. A family would need take-home pay of more than $5,000 to have the same spending power that $3,000 gave in 1939. Nearly 80 per cent of our

families earn less than $5,000 and consequently would have difficulty meeting the costs of a serious or prolonged illness."

With their reinforcements crumbling badly, the socializers are faced with another inroad of facts as the AMA scores this flagrant misuse of ten-year-old statistics.

States the AMA in a brief pamphlet reprinted from *The Journal:*

"With the coming of Blue Cross and Blue Shield insurance plans and those developed by the insurance companies, the test of inability to pay has been utterly and completely changed. The emphasis today in the purchase of medical care is on prepayment, as contrasted with the concept of postpayment of former times. The test of the ability to pay for the type of medical care covered by Blue Cross and Blue Shield policies, especially in the case of major illness . . . is the ability of a family to prepay the premium for a combined Blue Cross-Blue Shield hospital and medical insurance policy for the entire family. The cost of this family policy is the price of a package of cigarets, a bottle of beer or a gallon of gasoline a day. In other words, any family that cannot prepay about 20 cents a day . . . may be considered medically indigent in 1949 with respect to the medical care provided under these policies. Before the development of voluntary insurance plans, the test of the ability to pay medical care bills ran up to several hundred dollars—the cost of postpayment in a lump sum or in installments. As along as the American people continue to choose to pay half again as much for recreation as they do for all types of medical care and choose to spend as much for jewelry and watches, more for personal care and twice as much for tobacco as they pay for their physicians, the advocates of socialized medicine in 1949 will be hard pressed to use the setting of the 1930's, even using $5,000 instead of $3,000 as the income level, for measuring or computing the proportion of the population which cannot prepay the cost of medical care. The ability to 'prepay' and 'postpay' are simply two different ideas of two different decades."

OFFICIAL REPORT OF HEALTH ASSEMBLY PUBLISHED

The official report of the National Health Assembly is now available in book form. Oscar Ewing, who attempted to use the Assembly as a stepping stone to medical dictatorship, writes a verbose introduction to the book. Emphasizing the areas of agreement which the Assembly found, he had to admit that they did disagree on one small point: the matter of payment for medical care!

RADIO COMMENTATOR HITS TRUMAN SPENDING

Phelps Adams, replacing Fulton Lewis, Jr., during the latter's vacation, gave listeners to the program a new slant on government spending, July 25. He said:

"Compared to Harry Truman, Franklin D. Roosevelt was a nickel-nursing tightwad—incredible as it seems. During his three terms in office, Mr. Roosevelt had to pay virtually the entire combat cost of World War II . . . and he spent thirty-one billion dollars a year. That's billions with a capital B. But Harry Truman during his four, almost completely postwar peacetime years has spent one and a half times as much each year as Mr. Roosevelt did."

By way of comparison, Mr. Adams recounted the spending of George Washington's administration:

"He spent $4,000,000 a year. . . . Now the country, of course, has grown enormously since George Washington took office 160 years ago. It has grown in size, in population, and in wealth; but believe you me, nothing about this country has grown so fast and so much as the United States Treasury.

"Geographically the United States with all its possessions and territories is today about four times as big as it was in Washington's day. It has forty times as many people. And the combined income of all those people together—is 400 times what it was back there in 1789. But today the United States treasury under Mr. Truman, is spending nearly 11,000 times as much as Washington did. That's a lot of times."

Communication

To The Editor:

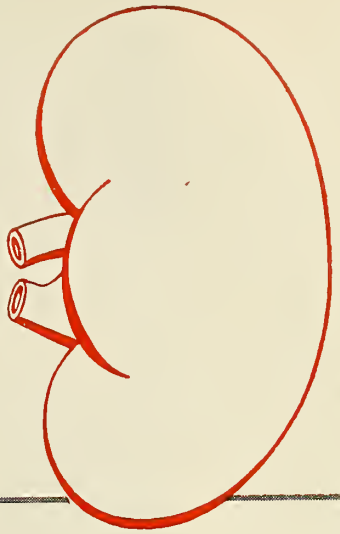
We noted in reading an editorial on chloromycetin which appeared in the July, 1949, issue of MINNESOTA MEDICINE, the statement is made that chloromycetin has been found to be of value in brucellosis but not in typhoid fever. Although we are not familiar with the clinical use of this drug in typhoid fever from personal experience, there have recently been reports of dramatic improvement following its use, and the hope has been held out that chloromycetin is a specific of great value in treating typhoid fever. These reports appeared in the *Annals of Internal Medicine,* 1948, Vol. 29, page 131, authors Woodward, Smadel, Ley, Green and Mankihar; and another report by Bradley which appeared in *The Lancet* for May 21, 1949.

Very truly yours,
D. S. FLEMING, M.D., Chief
Section of Preventable Diseases

Chronic senile phthisis is a condition which may drag on for years unsuspected, and the patient may come to be regarded as just another chronic bronchitic. The patients and their relatives are often so accustomed to their symptoms, and have had so little help from medicine, that they are averse to again visiting their doctor for a detailed overhaul, and the true state of affairs is only brought to light when some young member of the family develops acute tuberculosis, possibly meningitis, and all contacts are reviewed. Then the damage is done; for the sputum of the supposed chronic bronchitic is found to be loaded with tubercle bacilli.—W. A. LISTER, M.D., *The Lancet,* April 30, 1949.

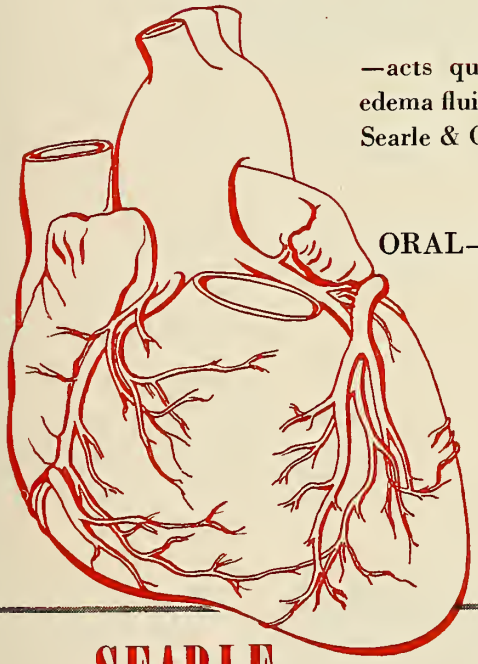
To increase sodium excretion

"Thus it becomes apparent that Aminophyllin is a diuretic agent in that it can mobilize and excrete fluid and sodium even in the face of decreased intake "[1]



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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

1. Brown, W. E., and Bradbury, J. T.: The Effectiveness of Various Diuretic Agents in Causing Sodium Excretion in Pregnant Women, Am. J. Obst. & Gynec. 56:1 (July) 1948.

In Memoriam

LYLE CHOLWELL BACON

Lyle Cholwell Bacon was born at Niles, Michigan, in 1866, descendant of a long line of early American settlers and pioneers. He was the son of Cyrus Bacon, Jr., a Major in the Medical Corps of the U.S. Army during the Civil War.

Due to the untimely death of his father he spent his early years in restricted circumstances. He was able to finish high school and come to Saint Paul about 1886, where he secured employment on the *St. Paul Pioneer Press*. After several years of steady work supplemented by summer employment, he was able to finish medical school, graduating from the University of Michigan at Ann Arbor in 1890. He was senior president of his medical class and all-time president of the class alumni. He served a short internship at the University Hospital and moved to Saint Paul where he was appointed professor of obstetrics and gynecology at Hamline University medical school. This office he retained until the school was merged with the University of Minnesota medical department some years later.

Dr. Bacon practiced in Saint Paul for fifty-eight years. He was a member of the Ramsey County Medical Society, Minnesota State Medical Association, American Medical Association, and the Minnesota Academy of Medicine.

Because of advanced years, he retired in February, 1948, and lived quietly until June 4, 1949. On this date he died peacefully from cerebral hemorrhage.

He is survived by his wife, Alice Kay Bacon, and four children: Mrs. Howard Y. Williams of Saint Paul, Dr. D. K. Bacon of Saint Paul, Dr. Lyle C. Bacon of Los Angeles, California, and Mrs. Frederick B. Hutt of Ithaca, N. Y.

JAMES H. BAKER

James H. Baker, Saint Paul, died at his home in Saint Paul July 31, 1949.

At the time of his retirement two years ago, Mr. Baker was executive secretary of the Hennepin County Medical Society. Previous to that, he was Sunday editor of the *Minneapolis Tribune* for many years.

Mr. Baker was born in Mankato, Minn., and graduated from University of Minnesota in 1913. He covered General Pershing's expedition into Mexico in pursuit of Pancho Villa for the *Minneapolis Tribune* in 1916.

During World War I he served with the Norton-Hardjes ambulance corps and later became a lieutenant in the French artillery. He was decorated by the French and Italian governments.

Mr. Baker is survived by his wife, a daughter, Mrs. Hamilton Ross, and a son, Bartlett, all of Saint Paul.

OSCAR L. BERTELSON

Dr. Oscar L. Bertelson of Crookston died suddenly July 14, 1949, at his home. He was a former resident of Fergus Falls.

Dr. Bertelson was born at Fayette, Iowa, October 2[illegible] 1878. He obtained his medical degree at the Universit[illegible] of Minnesota Medical School in 1900 and took eigh[illegible] months of postgraduate work at the New York Ophthal[illegible] mic College. He practiced for two years at Beltrami be[illegible] fore locating at Crookston.

Dr. Bertelson specialized in eye, ear, nose and throa[illegible] diseases. He was a Division Surgeon for the Grea[illegible] Northern Railway for many years. He was a member o[illegible] the Crookston Elks lodge and a member of the Re[illegible] River Valley Medical Society, the Minnesota State an[illegible] American Medical Associations.

Dr. Bertelson was married to Bertha Asseln, wh[illegible] preceded him in death in December, 1948. Because of il[illegible] health he had not been active in his profession for severa[illegible] years.

FAYETTE DWIGHT KENDRICK

Dr. F. D. Kendrick, St. Paul, died August 24, 1949 at the age of ninety-three.

Dr. Kendrick was born November 29, 1856, in Drey[illegible] den, Michigan. He graduated from the University o[illegible] Michigan Medical School, Ann Arbor, in the same clas[illegible] with Dr. William J. Mayo. He practiced homeopathy a[illegible] Bismarck, North Dakota, in the horse and buggy day[illegible] before coming to St. Paul in the early nineties.

On October 10, 1893, he married Sarah Kirk Stees o[illegible] St. Paul and moved into the Stees mansion, at 488 Gran[illegible] Avenue, built by Colonel Heather in the sixties. There[illegible] he has since lived but did not practice his profession, de[illegible] voting his time to hunting and fishing, to playing th[illegible] violin and piano, and to inventions, some of which he pat[illegible] ented. Mrs. Kendrick died in 1930.

Dr. Kendrick is survived by one daughter, Mrs. Isa[illegible] belle Kutili of Chicago, and two grandchildren, Ken[illegible] drick J. Kutill and Sally A. Kutill, also of Chicago.

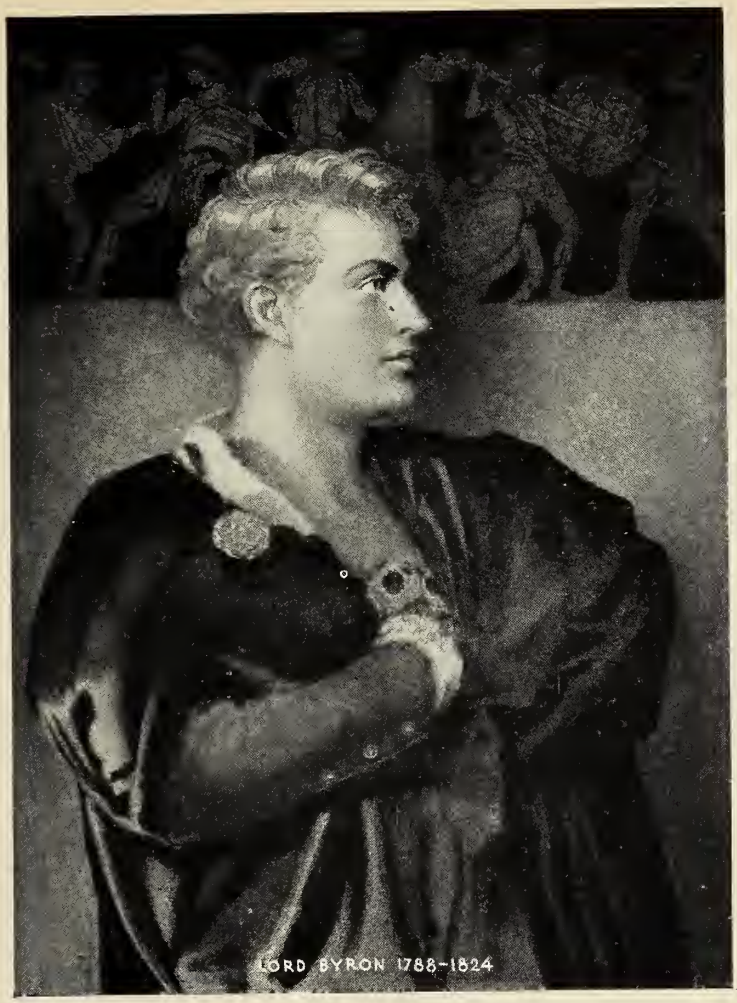
VERNON JOHN TELFORD

Dr. Vernon John Telford of Litchfield, Minnesota died on July 18, 1949, in Eitel Hospital, Minneapolis. He was stricken with a heart attack while driving to Minneapolis.

Dr. Telford was born in Pipestone, Minnesota, July 15 1899. He obtained a B.S. degree from Hamline University and his M.D. degree from the University of Minnesota Medical School in 1929. After interning at St Mary's Hospital, Duluth, he practiced at Edgerton Minnesota, from 1930 to 1931, and had practiced eighteen years in Litchfield.

Dr. Telford was a member of the Meeker-Kandiyohi-Swift County Medical Society, the Minnesota State and American Medical Associations.

(Continued on Page 934)



★ *Epileptic Men of Genius* ★

The brilliant English poet, Lord Byron, who had many mild convulsive attacks during his short life, is an outstanding example of the fact that epilepsy need not cloud a man's mentality.

Comparative studies have shown that in some cases better control of grand mal as well as petit mal seizures can be obtained with Mebaral than with corresponding doses of other antiepileptic drugs. Mebaral produces tranquillity with little or no drowsiness. It is particularly desirable not only in epilepsy but also in the management of anxiety states and other neuroses. The fact that Mebaral is almost tasteless simplifies its administration to children. Average dose for children ½ to 3 grains, adults 3 to 6 grains daily. Tablets ½, 1½ and 3 grains.

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$15,000.00 accidental death *$75.00 weekly indemnity, accident and sickness*	**$24.00** *Quarterly*
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SURGERY—Intensive Course in Surgical Technique, two weeks, starting September 26, October 24, November 28.
Surgical Technique, Surgical Anatomy and Clinical Surgery, four weeks, starting September 12, October 10, November 7.
Surgical Anatomy and Clinical Surgery, two weeks, starting September 26, October 24, November 21.
Surgery of Colon and Rectum, one week, starting October 10, November 28.
Esophageal Surgery, one week, starting October 10.
Thoracic Surgery, one week, starting October 3.
Breast and Thyroid Surgery, one week, starting October 10.
Fractures and Traumatic Surgery, two weeks, starting October 3.
GYNECOLOGY—Intensive Course, two weeks, starting September 26, October 24.
Vaginal Approach to Pelvic Surgery, one week, starting September 19, November 7.
OBSTETRICS—Intensive Course, two weeks, starting September 12, November 7.
MEDICINE—Intensive General Course, two weeks, starting October 3.
Gastroenterology, two weeks, starting October 24.
Gastroscopy, two weeks, starting September 26, October 24.
DERMATOLOGY—Formal Course, two weeks, starting October 24. Informal Clinical Course every two weeks.
ROENTGENOLOGY—Diagnostic and Lecture Course first Monday of every month.
Clinical Course third Monday of every month.
X-Ray Therapy every two weeks.
UROLOGY—Intensive Course, two weeks, starting, September 26.
Ten Day Practical Course in Cystoscopy every two weeks.

General, Intensive and Special Courses in all Branches of Medicine, Surgery and the Specialties.

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(Continued from Page 932)

JACOB JOHN WESTRA

Dr. Jacob John Westra died July 17, 1949, in Champaign, Illinois.

Dr. Westra was born on March 2, 1908, at Grand Rapids, Michigan. He received the degree of A.B. in 1929 from Calvin College, the degree of Ph.D. from the University of Chicago in 1931 and the degree of M.D. from Rush Medical College, University of Chicago in 1936; he was intern for one year and resident for two years at Presbyterian Hospital in Chicago.

Dr. Westra entered the Mayo Foundation as a fellow in medicine on April 1, 1938, and remained until October 1, 1939, at which time he went to Owatonna, Minnesota, where he practiced until 1941. He then went to the Muncie Clinic, Muncie, Indiana. In 1944 he went to Champaign where he practiced until the time of his illness this summer.

He was a diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the American Medical Association, the Illinois State Medical Society, Alpha Omega Alpha, Sigma Xi and the Champaign County Medical Society of which he was secretary in 1949.

Senator Taft said that the doctors have long wanted an independent Department of Health. He has believed that an Under Secretary such as is suggested by S.14 of the 80th Congress would be a fair compromise and would accomplish the desired results. However, the doctors' viewpoint has been upheld by the Hoover Commission which suggested the establishment of a United Medical Administration.

He stated, further, that Plan No. 1 does not follow the Hoover Commission, but instead places full power in the Secretary of Welfare. While some of its proponents suggest that this is only a temporary arrangement and that they will later look into the medical phase, this is certainly not the view being taken by the present Administrator. Senator Taft said, "If Plan No. 1 goes into effect, there will never be a United Medical Administration." He stated that he opposes Plan No. 1 because it completely subordinates health and education to welfare and because it fails to follow the Hoover Commission.

A.M.A. Bulletin No. 2

"If I am sick, I really want someone to look after me. If I am about to die, I want to make sure that I am given every chance the medical profession can offer me.

"I do not want someone, whose salary goes on whether I live or die, making a casual observation. I do not for a moment question the ethical attitudes of the medical profession either under socialized medicine or in private practice.

"But boy, oh boy, I sure do question human nature and am fearful of it. If you take the incentive of building a private practice or of sustaining a reputation away, I am afraid the socialized doctor is liable to relax and rest on his oars."—DANN O. TABER in *The Athens (Ohio) Messenger.*

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Exclusive Features

- Economical — 7 cents per test
- Motor blower for easy breathing
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- Protractor eliminates technical errors
- Automatic slide rule calculation, no computation or mathematical errors
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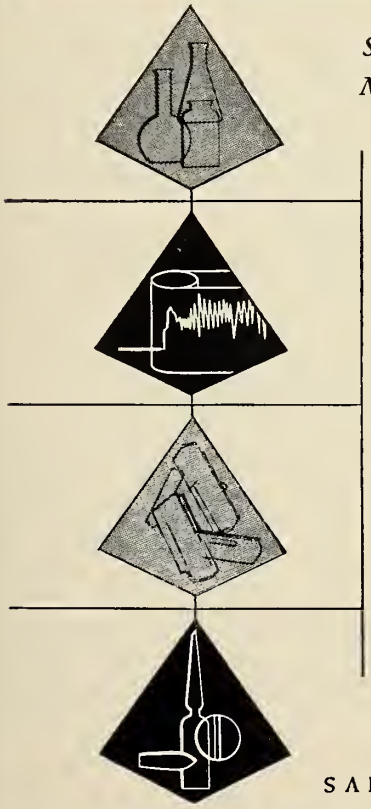
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FALL CLINICS

The division of social welfare Medical Services Unit, Crippled Children Services, announces the following Fall Clinic Schedule for 1949:

Winona	September 10	Central School	Winona Wabasha Olmsted Fillmore Houston
Fergus Falls	September 17	High School	Ottertail Wilkin
Bemidji	September 24	High School	Beltrami Clearwater Hubbard
Little Falls	October 1	High School	Morrison Todd Mille Lacs
Virginia	October 15	Technical High School	St. Louis
Crookston	October 22	Crookston High School	Polk Mahnomen Norman
Willmar	October 28 (Friday)	Auditorium	Swift Kandiyohi Chippewa Renville Meeker McLeod
Marshall	October 29	High School	Lyon Lincoln Redwood Yellow Medicine Lac Qui Parle Blue Earth
Mankato	November 5	Franklin	Sibley Nicollet LeSueur Watonwan Brown Waseca Martin Faribault

AMERICAN ACADEMY OF PEDIATRICS MINNESOTA CHAPTER

Approximately twenty Minnesota pediatricians attended an organizational meeting of the Minnesota Chapter of the American Academy of Pediatrics in Duluth on August 6.

Dr. R. E. Nutting, Duluth, was elected president of the chapter. He had served as chairman of the state Academy membership prior to the formal organization.

Other officers elected at the meeting are Dr. L. F. Richdorf, Minneapolis, vice president; Dr. H. F. Flanagan, Saint Paul, secretary-treasurer; and Dr. R. L. J. Kennedy, Rochester, and Dr. E. D. Anderson, Minneapolis, fellows-at-large.

The Minnesota membership in the American Academy of Pediatrics totals forty-five.

AMERICAN COLLEGE OF CHEST PHYSICIANS POSTGRADUATE COURSE

The fourth annual postgraduate course sponsored by the American College of Chest Physicians will be held at the St. Clair Hotel, Chicago, September 19 through 23.

The course will consist of addresses by specialists in chest diseases and related fields. Round-table luncheon meetings will also be held. The principal speaker at a dinner on the evening of September 22 will be Dr. Andrew C. Ivy, vice president of the University of Illinois College of Medicine.

Those interested should apply to the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois, remitting the registration fee of $50.

MILITARY MEDICAL CONVENTION

Under the auspices of the Twin City Medical Department Reserve Officers a Convention on Military Medicine will be held at the University of Minnesota, October 7 and 8, 1949. Attendance at this convention is urged for all Medical Reserve Officers as well as all other doctors interested in the subjects to be presented and in Military Reserve matters.

Program Outline
October 7

A.M.

11:30 Staff Meeting and Luncheon. Powell Hall.

P.M.

12:30 Registration. Museum of Natural History.

1:30 Movies: The Atomic Bomb. Museum of Natural History.

3:00 Lecture: Antibiotics, Wesley W. Spink, M.D., Museum of Natural History.

6:30 Dinner: Radisson Hotel. Speaker: From the Office of the Surgeon General: Hiroshima, 1945-1949.

October 8

A.M.

8:00 Clinical demonstrations at various hospitals to be announced; emphasis on various medical and surgical specialties.

P.M.

1:00 Minnesota-Northwestern football game.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

This year's 116th Meeting of the American Association for the Advancement of Science in the Pennsylvania Zone hotels of New York City, December 26-31, 1949, is expected to have the largest attendance in the Association's 101-year history. All seventeen sections and subsections of the AAAS and some fifty-three affiliated societies will have programs. Among these are included four sessions of papers on research in medicine, to be held in the Statler Hotel, Wednesday and Thursday, December 28 and 29. These sessions are under the sponsorship of AAAS Section N, of which Dr. Gordon K. Moe, University of Michigan, is secretary. One of the several speakers who will assure an outstanding program for these meetings is Dr. Alan Gregg, Chairman

(Continued on Page 938)

A WORD OF GRATITUDE ON OUR 40th ANNIVERSARY



MUDCURA SANITARIUM

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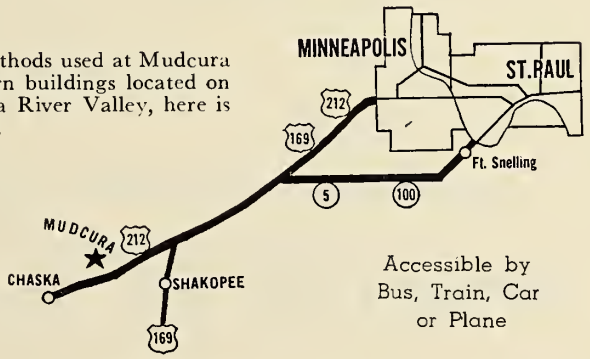
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We wish to take this means of expressing our appreciation to hundreds of physicians for their splendid support and cooperation during the past forty years. Support and cooperation which has enabled Mudcura Sanitarium to grow into one of the leading accepted hospitals in the Northwest for the treatment of arthritis and related conditions. The hospital of today is a monument to the foresight and ability of the late H. P. Fischer, M.D. Today, Mudcura Sanitarium is a modern 100-bed hospital, with a complete physiotherapy department. Also equipped with modern laboratory and X-ray facilities. Roy T. Pearson, M.D., and B. F. Pearson, M.D., are staff physicians. The hospital employs about fifty people, including a technician and dietitian, masseurs, masseuses and nurses. Endorsed by the Carver-Scott County Medical Society and Licensed by the State Board of Health, Mudcura Sanitarium is also a member of the American Hospital Association and approved by the American Medical Association.

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AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

(Continued from Page 936)

of Section N and Director of Medical Science, Rockefeller Foundation.

Physicians interested in scientific research or in the broader aspects of science are invited to join the Association and attend the meeting. Those interested may obtain application cards by writing the American Association for the Advancement of Science, 1515 Massachusetts Avenue, N. W., Washington 5, D. C. Membership dues are $6.50, which entitles the member to the weekly, *Science*, or the monthly, *Scientific Monthly*. An additional $3.50 brings both journals.

WINONA COUNTY SOCIETY

A meeting of the Winona County Medical Society was held in St. Charles on July 18. The scientific portion of the meeting was preceded by a dinner attended by forty-four physicians and wives.

Two new physicians in the area, Dr. Norbert P. Blochowiak of Rushford and Dr. Roger F. Hartwich of Winona, who were applying for membership in the group, were introduced at the meeting. During the scientific session a motion picture on cancer was shown by Dr. Hilmar Schmidt, Winona. A discussion of staff problems and public health program was conducted, and a committee on public relations was appointed, consisting of Dr. R. H. Wilson, Dr. P. A. Mattison and Dr. Herbert Heise, all of Winona.

The society will hold its next meeting in Minnesota City on October 1.

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MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

At the meeting of the Minnesota Society of Neurology and Psychiatry to be held Saturday, September 17, 1949, in Duluth, the program will be as follows:

Morning Session—10:00 a.m.
St. Mary's Hospital

The Szondi Test—L. E. Schneider, M.D.

Tumors In and About the Third Ventricle; An Analysis of Surgical Treatment—G. J. Strewler, M.D.

Prefrontal Lobectomy; A Follow-up Study of Thirty-five Cases—J. E. Haavik, M.D.

Neurological Problems; Three Cases Illustrating Difficulties Encountered Because of Misleading History—C. M. Jessico, M.D.

The Problem of Alcoholism—L. R. Gowan, M.D.

Luncheon—12:30 p.m.
Kitchi Gammi Club

Afternoon Session—2:00 p.m.
Deep sea fishing on the North Shore

LEO. G. RIGLER LECTURE

Dr. John Caffey, associate professor of pediatrics in the College of Physicians and Surgeons at Columbia University, New York, will present the annual Leo G. Rigler lecture at the University of Minnesota medical school Wednesday, November 2, at 8:15 p.m.

Dr. Caffey will speak on the subject "Some Normal Variations in the Growing Skeleton: Their Clinical Significance." He will speak in the auditorium of the Minnesota Museum of Natural History.

Associate pediatrician and roentgenologist at the Babies' Hospital and Vanderbilt Clinic, New York City, Dr. Caffey also is consulting pediatrician at the Grasslands Hospital, Westchester County, N. Y., and the Yonkers General Hospital, Yonkers, N. Y.

OCCUPATIONAL AND PHYSICAL THERAPY COURSE

Dr. H. D. Bouman, Professor of Physical Medicine, University of Wisconsin Medical School, Madison, Wisconsin, will participate as a visiting faculty member in a continuation course in Occupational and Physical Therapy to be presented at the University of Minnesota, October 13 and 14. The course is intended for occupational and physical therapists. Dr. Bouman will speak on the subjects, "Physical Medicine and Geriatrics" and "Rehabilitation of the Neurological Patient."



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Woman's Auxiliary

AUXILIARY EDITOR CALLS FOR NEWS

Mrs. S. N. Litman

The editors of Minnesota Medicine are reserving this generous section of the magazine for Auxiliary news each issue—news which will be of great interest to all members.

Information about local meetings, programs and Health Days, as well as articles on newly organized Auxiliaries and plans for the coming year will be especially appreciated.

News of this type should be mailed before the tenth of the month to Mrs. S. N. Litman, 4806 West Seventh Street, Duluth 7; while the chatty notes concerning members may be sent to Mrs. Leonard Arling, 2310 East 43rd Street, Minneapolis.

PR WORKSHOP WILL FEATURE EDITOR'S TALK

Mrs. Reuben Erickson

Max F. Ninman, editor and publisher of the Reedsburg, Wisconsin, *Times,* will be the banquet speaker for the second annual Women's Auxiliary Public Relations Workshop at the Radisson Hotel, September 22. Mr. Ninman is past president of the Wisconsin Press Association and will discuss community responsibilities of the doctor and the doctor's wife.

The day-long program, which begins at 9 a.m. with registration will include the following:

J. S. Jones, Minnesota Farm Bureau, speaking on the general threat of socialism; A. E. Cardle, M.D., chairman of the MSMA Health Education Committee, the transition from planning to action in the Minnesota program; Miss Mary McGinn, director, Woman's Division of Whitaker & Baxter, the national campaign; Kenneth Wunsch, publicity director, Northwestern National Life Insurance Company, distribution of literature, press relations.

P. Kenneth Peterson, state representative, the public platform, speakers' bureau; Arleth Haeberle, Radio Station WTCN, radio; Edwin Lewis, Associate Professor of Economics and Marketing, University of Minnesota, contacting individuals and groups; Mrs. Harold Wahlquist, national Auxiliary vice president, Health Days.

Several other speakers have not yet confirmed their appearance on the program, but the program will be directed toward a complete presentation of public relations techniques and objectives.

During the afternoon session there will be health movies shown by Mrs. Netta W. Wilson, senior health information consultant at the Minnesota Department of Health. Mrs. Wilson will also distribute lists of films available to Auxiliaries for showing in local communities.

Following last year's Workshop pattern, there will be roundtable discussions of Auxiliary organizational activities. Three roundtables have been scheduled: county presidents, county treasurers, and legislative and public relations programs.

The fall board meeting will be held Friday morning, in the Italian room of the Radisson. A block of rooms has been set aside at the hotel for the convenience of those out-of-town members who wish to spend the night.

VACATIONS OVER, FALL PLANS WILL BEGIN

Mrs. L. Raymond Scherer

With summer vacations ending, Woman's Auxiliary plans will be gaining headway for next year. Despite the indications that compulsory health insurance is a dead issue, this ten-year-old menace will, according to most observers, be resurrected in the next congressional session.

The four-point program developed for Woman's Auxiliaries by Whitaker & Baxter includes: endorsement drive, participation in speakers' bureaus, distribution of literature and the placing of material in the women's sections of local newspapers. Miss Mary McGinn, director of Witaker & Baxter's Women's Division, points out that each area should select the phases of the program most appropriate and concentrate on them. A forthcoming plan of action will soon be available in printed form for Auxiliary use.

PERNICIOUS ANEMIA

(Continued from Page 891)

with chronic lymphatic leukemia desperately ill with symptomatic hemolytic anemia two years ago was subjected to splenectomy and is still vigorous and operating his farm.

There is great controversy at the present time regarding the exact manner in which the spleen exerts this destructive effect. One school believes that the spleen is of the origin of an antigen in these instances, and that the whole process is an example of an immune body mechanism, similar to mis-matched transfusions; another feels that the enlarged spleen has simply a greater area in which to perform its usual "grave-yard" functions. But, whatever the cause, it is obvious that its recognition is of considerable importance, since the relatively simple operation of splenectomy produces such spectacular improvement in them.

In closing, I think it is fair to say that hematology has kept abreast, at least, with other medical fields, in the scope and interest of its advances.

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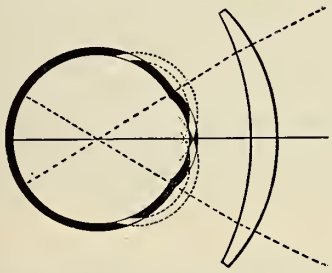
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Of General Interest

A million-dollar damage suit has been filed in the United States District Court by Dr. N. R. Brewer, a lecturer in physiology and director of the animal quarters at the University of Chicago. The suit was filed against the Hearst Publishing Company, Inc., publisher of the *Chicago Herald American,* and William Randolph Hearst of San Simeon, California. Pictures published of Dr. Brewer holding dogs which were described as tortured and tormented, and references to Dr. Brewer as a torturer, a sadist and a cruel experimenter, formed the basis for his suit.

Another million-dollar libel suit was filed ten days earlier by Dr. Virgil H. Moon, of Wake Forest College School of Medicine in North Carolina against the same defendants for misrepresenting his views on animal experimentation in the May 24 and May 29 issues this year. A similar article had been published on August 27, 1944, which falsified statements Dr. Moon had made in an interview. Efforts on the part of Dr. Moon for the past five years to have the newspaper correct the misrepresentation have been in vain.

Dr. Anton J. Carlson, president of the National Society for Medical Research, in announcing the two suits, stated that no campaign in our century has continuously carried as much irresponsible lying, maliciousness and defamation as the one aimed at the doctor and medical science researcher by the so-called anti-vivisectionists. The researchers are now organized as the National Society for Medical Research to actively combat this unjustifiable misrepresentation.

* * *

Dr. Albert V. Stoesser and Dr. Lloyd S. Nelson are now associated in the practice of allergy and pediatrics at 1409 Willow Street, Loring Park, Minneapolis.

* * *

On August 8, Dr. J. Webster Raattama joined the staff of the Adams Clinic in Hibbing. Dr. Raattama, a graduate of the University of Minnesota Medical School who served his internship at Columbia Hospital in Milwaukee, will practice in Nashwauk and Keewatin offices.

Dr. M. F. Hayes, who previously practiced at Nashwauk and Keewatin, has retired from the organization.

* * *

After practicing at Wanamingo for the past two years, Dr. Clifford N. Rudie became a staff member of the St. Peter State Hospital on August 1. Dr. Rudie previously practiced medicine in Los Angeles for five years and in Kenyon, Minnesota, for ten years.

* * *

The Alvarenga Prize has been awarded to Dr. Owen H. Wangensteen, director of the department of surgery at the University of Minnesota, by the College of Physicians of Philadelphia for his contributions to the etiology and therapy of gastric and duodenal ulcers. The prize was established under the will of Pedro Francisco Da Costa Alvarenga of Lisbon, Portugal, an associate fellow of the College of Physicians of Philadelphia, and is awarded annually on the anniversary of his death, July 14, 1883. Dr. Wangensteen will deliver the Alvarenga Lecture before the College on November 2.

* * *

Dr. Bernard P. Strouth, who practiced in Dubuque, Iowa, during the past year, has moved to Council, Idaho, to be associated in practice with a physician there.

* * *

It was announced on July 24 that Dr. Charles L. Sherman of Luverne had been elected president of the Northwestern Minnesota Tuberculosis Sanatorium board for the thirty-fifth time. First elected to the position in 1914, Dr. Sherman has been head of the board continuously since then.

* * *

In July, Dr. James A. Cosgriff, Jr., became associated in practice with his father, Dr. J. A. Cosgriff, and Dr. J. J. McLeod, Jr., in the Olivia Clinic. A graduate of the University of Minnesota Medical School, the younger Dr. Cosgriff served his internship at St. Mary's Hospital in Duluth. He recently completed two years of naval service, being stationed part of the time at naval bases on Attu and Kodiak, Alaska.

* * *

A three-week vacation tour through the Northwest was taken by Dr. and Mrs. Roger G. Hassett of Mankato during late July and early August. A highlight of the trip was a 300-mile cruise north of Seattle to the Campbell River where the annual Tyee Salmon Derby was being held. Other features of the journey were stops at Lake Louise and Banff in Canada and at Glacier and Yellowstone National Parks. During Dr. Hassett's absence his practice was conducted by Dr. Joseph C. Von Drasek, who has been associated in practice at the Medical Center in Mankato for the past year.

* * *

Dr. James Reinhardt, formerly of Detroit Lakes, became associated in practice with Dr. Lester N. Dale of Red Lake Falls early in July. A graduate of Temple University Medical School, Dr. Reinhardt served his internship at Northwestern Hospital, Minneapolis.

* * *

The superintendent of the St. Peter State Hospital, Dr. Burton P. Grimes, was a speaker at a meeting of the Exchange Club in Mankato on August 10. The title of Dr. Grimes' talk was "Report on Your State Hospital."

* * *

An additional story will be added to the Mayo Memorial building at the University of Minnesota as a result of a new $200,000 Federal grant, it was announced on August 1. According to present plans, construction

of the building, which will now be at least eighteen stories high, will begin early in 1950.

Originally the plans for the memorial medical center called for a structure nineteen stories high. Later plans cut this to sixteen stories, and still later added a seventeenth. The foundations will be built to hold twenty-two stories, and the final size of the building will depend on costs.

* * *

The principal speaker at a meeting of the Winona Rotary Club on August 3 was Dr. F. J. Vollmer of Winona, who discussed the profession of medicine. He listed the qualifications which should be met by any youth who plans to enter the field of medicine, and he described the years of academic preparation and the various types of specialized training. Dr. Vollmer's talk was the first of a series by different speakers on the various professions.

* * *

Rushford acquired a new physician late in July when Dr. Norbert P. Blochowiak opened offices for the practice of medicine in the city. A graduate of the University of Minnesota Medical School, Dr. Blochowiak served his internship at Ancker Hospital, Saint Paul.

* * *

"Questions on Compulsory Health Insurance" was the title of a talk presented by Dr. Charles E. Rea, Saint Paul, at the University of Minnesota on July 20. Dr. Rea is a clinical assistant professor of surgery at the University.

The ten interns at St. Luke's Hospital, Duluth, spent August 9 fishing in Lake Superior, but their patients were not left unattended. While the St. Luke's group angled for lake trout, the interns at Duluth's St. Mary's Hospital carried out the duties of their colleagues as well as their own. The plan called for a later fishing trip by the St. Mary's interns, with the duty arrangement reversed.

* * *

It was announced on July 28 that a new clinic building would be constructed in Anoka. When completed, the twenty-four-room, air-conditioned structure will be occupied by Dr. Frank E. Mork, Dr. A. Harold Mork and Dr. Joseph Twidwell, Anoka practitioners. The building will also house two dentist suites.

* * *

Three physicians were among those named to the governor's advisory council of the Youth Conservation Commission on July 27. The physicians appointed by Governor Luther W. Youngdahl are Dr. Maurice N. Walsh, Rochester; Dr. Eric K. Clarke, Minneapolis, and Dr. H. S. Lippman, Saint Paul.

* * *

National Heart Institute grants of more than $1,200,000 to support heart disease research work in medical schools and hospitals in twenty-one states, the District of Columbia, and Canada were announced on July 15 by Oscar R. Ewing, Federal Security Administrator.

The grants were approved by Surgeon General Leonard A. Scheele of the Public Health Service following recommendation by the National Advisory Heart Coun-



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cil. The council is a sixteen-member body composed of outstanding leaders in the medical sciences and public affairs.

According to Dr. C. J. Van Slyke, director of the National Heart Institute, the grants comprise only a portion of the Federal funds to be awarded for heart disease research during the current fiscal year. Additional grants for new heart research and for construction of heart research facilities and laboratories are expected to be announced shortly.

Established last August under authority of the National Heart Act, the National Heart Institute is one of the National Institutes of Health, the research arm of the Public Health Service, with headquarters in Bethesda, Maryland. In addition to conducting scientific research in its own laboratories, the Institute administers federal funds supporting research and training related to the cause, prevention and methods of diagnosis and treatment of heart disease in other institutions throughout the country.

* * *

Members of the Mankato Rotary Club, at a meeting on August 3, heard Dr. H. H. Russ, Blue Earth, give a talk on "The Prevalence and Treatment of Cerebral Palsy Handicapped Child en."

* * *

Dr. Lewis I. Younger, Mankato, announced on July 16 that Dr. Roger F. Hartwich, formerly of Minneapolis, had become associated with him in the practice of medicine. A graduate of the University of Minnesota Medical School, Dr. Hartwich interned at Milwaukee County General Hospital, then served in the army in Europe during World War II. Following his discharge in 1946, he took postgraduate work at the University of Minnesota and then served a three-year residency in general surgery at Swedish Hospital, Minneapolis.

* * *

Word has been received that Dr. Richard Fuchlow of El Paso, Texas, who formerly practiced in the Upper Midwest, died of a coronary occlusion early in August.

* * *

Dr. R. H. LaBree and Dr. J. J. Coll, of the Duluth Clinic, were speakers at a meeting at Grandview Hospital, Ironwood, Michigan, on August 9. Dr. LaBree discussed "Peripheral Vascular Diseases," and Dr. Coll spoke on "Liver Dysfunction."

* * *

Fifty-five grants totaling $138,726, in support of medical research, have been awarded during the first half of this year by Smith, Kline and French Laboratories, of Philadelphia. Mr. W. F. Thompson, vice president in charge of the company's research, announced that the funds were provided as scholarships and fellowships, as aids to preclinical research and for the support of studies in various fields of clinical medicine.

* * *

Dr. A. R. Aanes of Ellsworth, Wisconsin, won the grand champion and runner-up ribbons for his dahlias in the twentieth annual flower show held in Red Wing in August. First place for roses was won by Dr. William Liffrig of Red Wing.



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Dr. James F. Bosma, Minneapolis, assistant professor of pediatrics at the University of Minnesota, and Dr. Donald R. Lannin, Saint Paul, in charge of orthopedics at the University of Minnesota Health Service, have become associated with the medical staff of the Elizabeth Kenny Institute in Minneapolis.

* * *

A chest x-ray machine was given to Rochester and to Olmsted County in July by the Olmsted County Christmas Seal organization. The machine, which will be used for many purposes in the city and county, was purchased at a cost of more than $9,000.

* * *

Dr. and Mrs. Charles C. Merchant, medical missionaries of the Baptist General Conference, sailed from New York with their two children on August 30, bound for Tezpur, Assam, India, where Dr. Merchant will become chief of staff of Ahlquist Memorial Hospital. A graduate of the University of Minnesota Medical School, Dr. Merchant served his internship at Miller Hospital, Saint Paul, and then took graduate training in surgery at Deaconess Hospital, Minneapolis.

* * *

Announcement was made on July 31 that Dr. Evelyn Johnson had been appointed medical director of the Diagnostic Clinic for Rheumatic Fever in Saint Paul. The clinic is a public health service for children under eighteen, sponsored and financed by the Saint Paul section of the National Council of Jewish Women.

Dr. Johnson has been associated with the Minneapolis Children's Heart Clinic and Hospital for the past eight years, and she has also been affiliated with the University of Minnesota Children's Heart Clinic.

* * *

A service recognition certificate was presented to Dr. H. H. Young, Rochester, at the annual summer meeting of the Minnesota Safety Council in Duluth on August 19. Dr. Young is a member of the council's executive committee.

* * *

While Dr. Ralph H. Larson of Anoka took a week of vacation, in July, his practice was conducted by Dr. Myron J. Woltjen of the staff of Asbury Hospital, Minneapolis.

* * *

Dr. R. R. Hendrickson, formerly of Lake Park, became medical director of Sunnyrest Sanatorium in Crookston on September 1. Dr. Hendrickson, while at Lake Park, was superintendent and medical director of Sand Beach Sanatorium, medical director of Fair Oaks Lodge Sanatorium at Wadena and medical consultant at Ottertail County Sanatorium. Dr. Selmer Johnson, a former resident physician at the state sanatorium near Walker, has replaced Dr. Hendrickson as medical director of the Fair Oaks Lodge Sanatorium and as medical consultant at the Ottertail County Sanatorium.

* * *

On August 1, Dr. John L. Delmore, Sr., completed forty years of medical practice in Roseau. He now conducts his practice in the Delmore Clinic in association with two of his sons, Dr. John L. Delmore, Jr., and Dr. Robert J. Delmore.

* * *

Dr. Philip S. Hench, Rochester, has been appointed to head a national committee of medical scientists in a study of the new rheumatoid disease drugs, cortisone (Compound E) and adrenocorticotrophic hormone (ACTH). The group headed by Dr. Hench was appointed by Surgeon General Leonard A. Scheele of the Public Health Service.

* * *

Staff members of the Ada Clinic moved into their newly constructed office building on August 1. The modernistic one-story structure contains three physicians' offices, a treatment room, laboratory, recovery room, waiting room and a double dental office. The clinic staff is composed of Dr. Bruce Boynton, Dr. Byron Kinkade and L. A. Sanders, D.D.S.

* * *

Approximately 175 guests attended an open house held in the Barnesville city hall on July 31 to celebrate the forthcoming (August 3) golden wedding anniversary of Dr. and Mrs. Alphonse Cyr. A musical program, a buffet supper and the presentation of a purse of money to the couple were highlights of the occasion. Earlier in the day, Dr. and Mrs. Cyr were guests of honor at a baseball game.

Dr. Cyr has practiced medicine in Barnesville since 1906. Always active in civic affairs, he has served as city health officer for several years and has been a member of the school board for almost twenty years. He is a graduate of the medical school at Laval University in Montreal, Canada.

* * *

It was announced on August 3 that Minnesota had granted a medical license to the first foreign-educated

physician to qualify under the revised regulations of the State Board of Medical Examiners.

The license was issued to Dr. Robert C. Lam, a Chinese-born and Chinese-educated American citizen, who recently completed a residency in surgery at Asbury Hospital, Minneapolis. After obtaining a master's degree in bacteriology at the University of Illinois in 1940, Dr. Lam returned to China and began his medical studies at Peiping Union Medical College. He completed his medical school work at West China Union University in 1944 and interned at the Associated Universities United Hospital at Chengtu. On January 1, 1947, he began his surgical residency at Asbury Hospital, Minneapolis, and while there attended medical classes at the University of Minnesota.

Upon acquiring his license, Dr. Lam accepted a position as resident surgeon at St. Mary's Hospital, Grand Rapids, Michigan. Minnesota and Michigan have a reciprocal arrangement on licenses.

* * *

Dr. J. J. Coll, Duluth, discussed some interesting aspects of myxedema before the Range Medical Society on August 23, 1949. The meeting was held at the Esquemoba Club at Virginia.

* * *

Dr. C. M. Jessico, Duluth, will speak on "Symptoms of Insecurity in Childhood" before the Association of Childhood Educators at the meeting held at the State Teachers' College, Superior, on September 21.

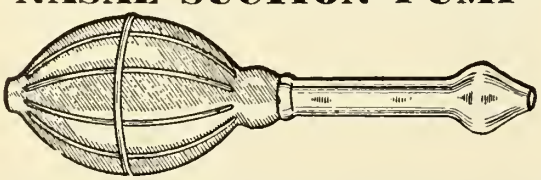
* * *

Dr. Robert V. Hodapp, son of Dr. R. J. Hodapp of Willmar, has joined the staff of the Lakeland Medical Clinic in Willmar. Dr. Robert Hodapp recently completed two years of military service.

* * *

In Norwood, Dr. Joseph D. Selmo and Dr. Grant L. Griebie recently completed the organization of the Norwood Clinic. Dr. Selmo has practiced in Norwood since 1940. Dr. Griebie, a graduate of Northwestern University Medical School in 1944, studied surgery in Chicago for two years and then served as an associate in surgery with a clinic in Great Falls, Montana, for three years. In organizing their clinic in Norwood, the two physicians added a considerable amount of new equipment to their facilities.

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On August 4, Dr. Gaylord W. Anderson, head of the mayor's poliomyelitis committee in Minneapolis, announced that twenty-seven nurses and four physiotherapists were needed at the University Hospitals and the Elizabeth Kenny Institute. The appeal was not made because poliomyelitis had reached alarming proportions in the state. The reasons given for the appeal were the following: Poliomyelitis treatment has improved over the years, so that increased personnel is needed. Furthermore, since Minneapolis is a poliomyelitis treatment center, facilities in the city are overtaxed.

* * *

It was announced on August 1 that Dr. Kenneth J. Kelley had installed a new x-ray machine in his offices at Grove City.

* * *

Grants of $2,056,426 by the National Institutes of Health to provide continued support for medical and allied research projects at non-federal institutions, were announced on August 9 by Oscar R. Ewing, Federal Security Administrator. The grants were approved by Surgeon General Leonard A. Scheele of the Public Health Service following recommendations made by the National Advisory Health Council. A total of 217 projects will be supported at ninety-four institutions located in thirty-one states, the District of Columbia, Alaska and four foreign countries.

* * *

In Blue Earth, Dr. and Mrs. John A. Broberg, both eighty-eight years of age, celebrated their sixtieth wedding anniversary on August 20. Dr. Broberg retired from his medical practice seven years ago, after completing fifty years of service to residents of Faribault County. A graduate of the University of Michigan Medical School, Dr. Broberg first began practice in Delavan in 1892. After six years there, he moved to Blue Earth, where he has since remained.

* * *

Dr. and Mrs. M. O. Oppegaard returned to Crookston in August after a two-month trip through the countries of western Europe. While overseas, Dr. Oppegaard attended a medical meeting held in London early in July and visited clinics and hospitals in several European medical centers. A feature of the trip was a journey to the German city of Neustadt in northern Bavaria. Several citizens of Crookston have been sending aid to the needy in Neustadt, and Dr. Oppegaard, as mayor of Crookston, made the visit as a good-will gesture to the people of that German community.

* * *

Nearly $6,000,000 was contributed to the National Society for Crippled Children and Adults through the 1949 Easter Seal campaign. Practically all of this was contributed through a direct-mail campaign by member societies throughout the forty-eight states, the District of Columbia, Hawaii and Alaska. Funds are used for direct relief, education and research. More than 90 per cent of the funds raised annually remain in the state for local use.

* * *

According to the Public Health Service, the life expectancy of a white male at birth is now 65.2 years and

that of a white female is 70.6 years. The expectancy of a non-white male at birth is 57.9 years and that of a non-white female is 61.9 years.

* * *

Members of the Minneapolis Woman's Club presented a check for $5,600 to the Minnesota Mental Hygiene Society on August 24, to be used for the first mental hygiene clinic for children in Minneapolis. The amount was far more than double the $2,000 promised by the club earlier in the year. The mental hygiene clinic will be located at St. Barnabas Hospital and is expected to be open early next year.

HOSPITAL NEWS

On October 1, a hospital limited to convalescent and chronically ill patients will be opened in Aitkin. Dr. Erich F. Blaufuss, a veterinarian, is converting his eleven-room residence into a twenty-bed hospital, which he will manage. All physicians will be welcome to bring patients to the hospital. Among the facilities offered will be a contagion ward for the isolation of patients with communicable diseases. The hospital, which is located just outside the village limits of Aitkin, will be known as "The Gables."

* * *

The first public health center to be constructed under the Hospital Survey and Construction Program in Minnesota will be ready for occupancy early next year. Started March 21, 1949, the public health center is being constructed near the downtown section of Rochester, overlooking the Zumbro River. Two stories high and L-shaped, the building will house the offices, laboratory, and clinic facilities of the Rochester-Olmsted County Health Unit and District Number III of the Minnesota Department of Health, as well as city welfare offices.

Plans for a Rochester health center, where public health facilities could be grouped together under one roof, were first considered twenty-five years ago when Dr. C. H. Mayo was Rochester health officer. Because the Department of Health moved into the new city hall, hopes for a health center were temporarily abandoned. The second attempt is now about to become a reality, with construction proceeding satisfactorily and the likelihood that health and welfare personnel will move into the new building about February 1, 1950.

The total cost of the building is approximately $270,000. Of this amount, the Mayo Association gave $150,000 the City of Rochester appropriated $30,000, and the remaining one-third ($90,000) is available under the provisions of the Hill-Burton Act (the Hospital Survey and Construction Program).

MINNESOTA MEDICAL SERVICE

At the completion of the seventh month of 1949, Blue Shield payments to Doctors of Medicine in Minnesota for services rendered Blue Shield subscribers and their dependents passed the half million mark. This is evidence that the people of Minnesota are taking readily to Blue Shield and also that the doctors of Minnesota are beginning to feel the effects of their own plan.

A letter has been received in the Blue Shield office written by a Blue Shield subscriber in which the subscriber sets forth the thoughts of a general practitioner in southern Minnesota. The criticism is that in general Blue Shield does not pay enough on most cases, the general practitioner does not get a fair break. It is fortunate that this feeling is in a small minority. However, it would seem that such an imprssion should not exist at all. It would be wonderful if every doctor in Minnesota could feel that Blue Shield is his own plan, that it is to his advantage to promote it. Many groups of physicians have sponsored Blue Cross and Blue Shield campaigns both organizationally and financially. They have talked to groups in person and over the radio and have given money for paid advertising and considerable time to planning campaigns. When the people in a community hear "Doctor Joe's" voice on the radio they know Blue Shield is a good plan and the plan for them because "Doctor Joe" said so. When they see an advertisement in the paper signed by all the doctors in a community, they know they should sign up for Blue Cross and Blue Shield because the doctor's sponsorship indicates that the plan is legitimate and will benefit the patient when he most needs assistance.

Eventually, the good a group of doctors has done is heard in the Blue Shield office, but as soon as one doctor in Minnesota makes a statement like that above it is heard immediately If questions come up requiring information which is not readily available and this information is in the Saint Paul office, feel free to write or call to obtain it.

A new policy is being adopted to inform doctors regarding Blue Shield and Blue Cross. Bi-monthly a



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bulletin will be sent to the president and secretary of each County Medical Society to be read at each County Medical Society meeting.

At the completion of the first six-month period, there were 29,327 Blue Shield single subscriber contracts in effect and 45,500 family contracts. These contracts represent a total of 190,853 persons in Minnesota covered by Blue Shield. A year ago there were 32,550 persons covered by Blue Shield. Also a year ago Blue Shield cases averaged 4.3 per day, but today the average has increased to 63.1 per day. This is an increase of nearly 1,500 per cent.

Over 8,498 more persons in Minnesota received care under the Blue Cross Plan during the first six months of 1949 as compared with the number receiving Blue Cross benefits during the first six months of last year.

Out of every 1,000 persons covered by Blue Cross, fifty-eight more persons received Blue Cross benefits during the first six months of this year as compared with those receiving benefits during the same period in 1948.

Respiratory diseases ranked first in frequency of occurrence, maternity benefits ranked second, injuries and poisoning third, and digestive diseases fourth.

Although maternity cases ranked second in frequency of occurrence, the number of cases per 1,000 contracts remained the same.

Maternity cases numbered 9,805 at the end of June, and Blue Cross maternity benefits totalled $773,679.

Between January 1 and June 30 of this year, Blue Cross subscribers received benefits totalling $4,671,456 in all, and received 414,962 days of hospital care.

Of the total Blue Cross benefits, during April, May and June of this year, as many as sixty-eight cases were over $1,000.

An unusually large hospital bill was received during the month of July. The total hospital bill for a sixty-one-day-stay pneumonia case was $2,783, on which the Blue Cross allowance was $2,445.

Current enrollment in Blue Cross totals 935,026, and Minnesotans have saved themselves over $35,000,000 in hospital bills during the past sixteen years because they were Blue Cross subscribers.

Nationally, there are now 33,745,826 Blue Cross subscribers representing over 21 per cent of the total population in the United States.

ANESTHESIA FOR THORACIC PROCEDURES

(Continued from Page 897)

the intercostal space until the chest is tightly closed. The lobes are then expanded and the catheter removed.

Upon returning to his room the patient is placed in an oxygen tent if any signs of hypoxia are present. Sedation should be kept to a minimum. Excessive sedation will depress respirations and also interfere with the removal of pulmonary secretions by depressing the cough reflex.

The postoperative pain may be lessened by blocking the affected intercostal nerves with one of the long acting anesthetic agents. Obliteration of this pain will promote earlier ambulation and increase respiratory exchange. Intravenous alcohol has also been used successfully postoperatively. This solution makes the patient more comfortable without undue respiratory depression.

Summary

Anesthetic problems created by thoracic surgical procedures have been discussed. The maintenance of a patent airway, prevention of anoxia, replacement of blood and fluid and the control of untoward cardiac stimuli should be the major considerations of the anesthesiologist during thoracic procedures.

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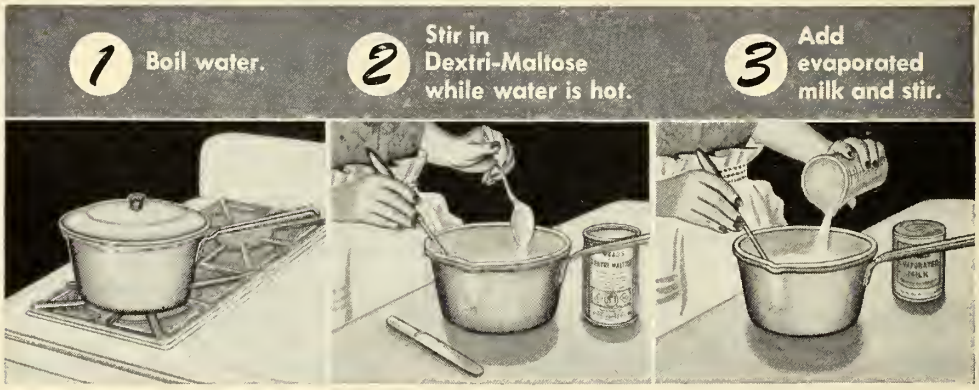
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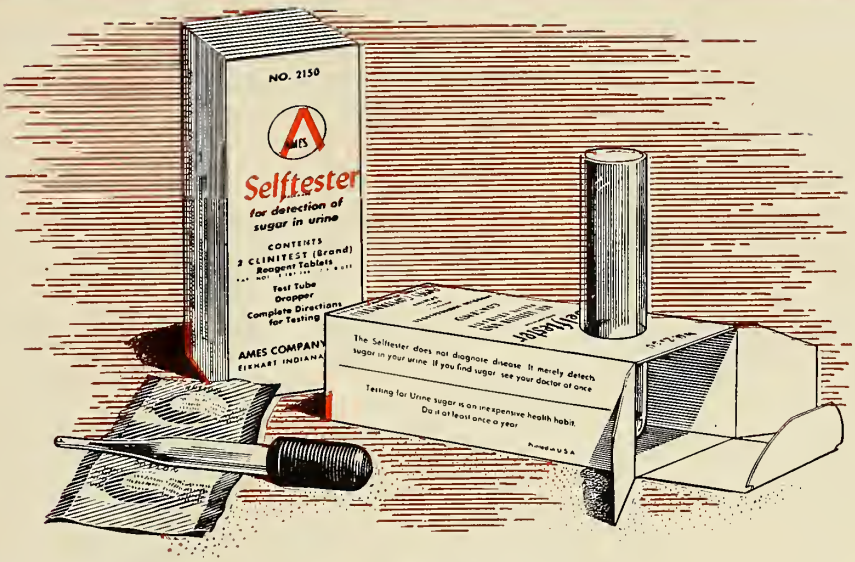
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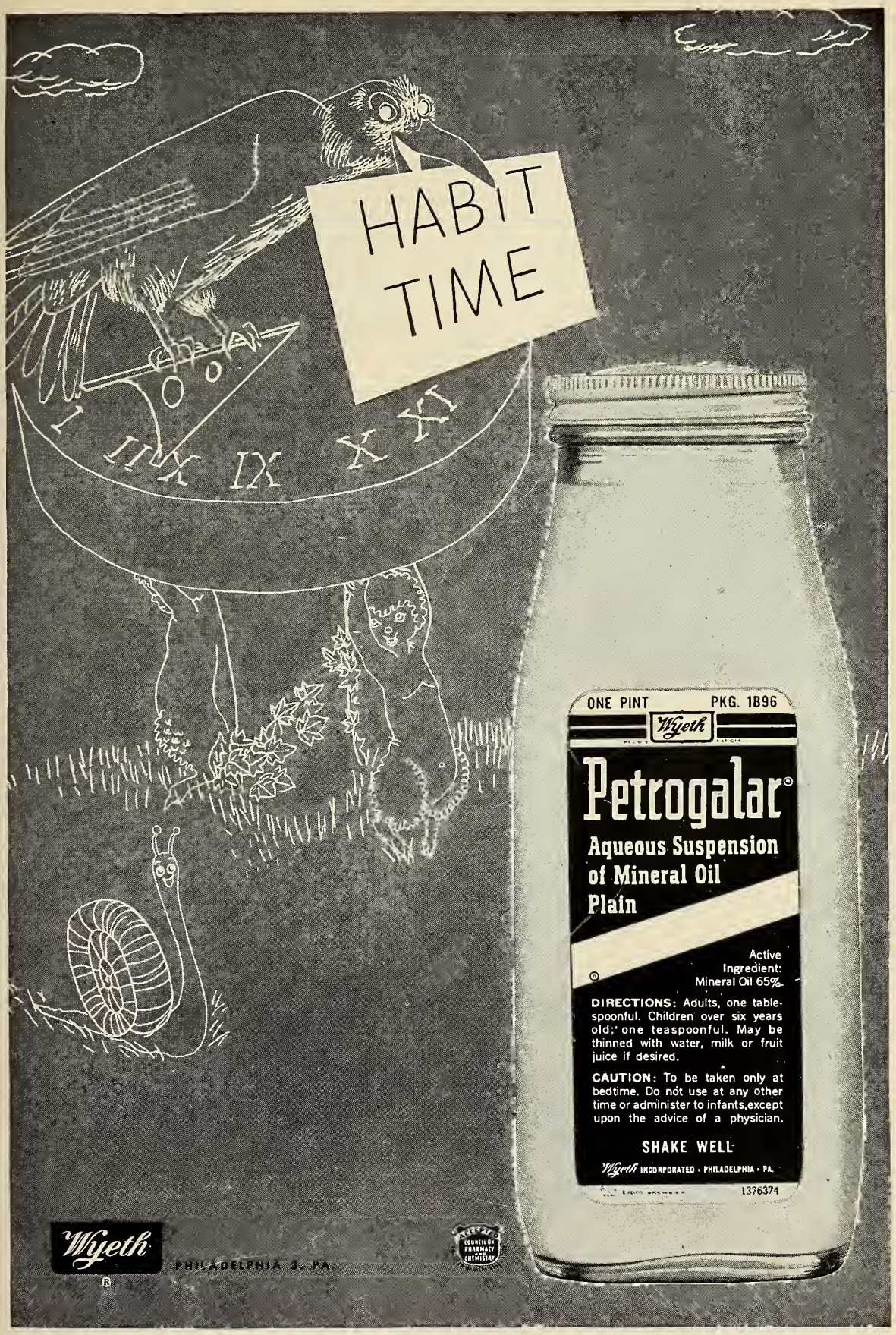
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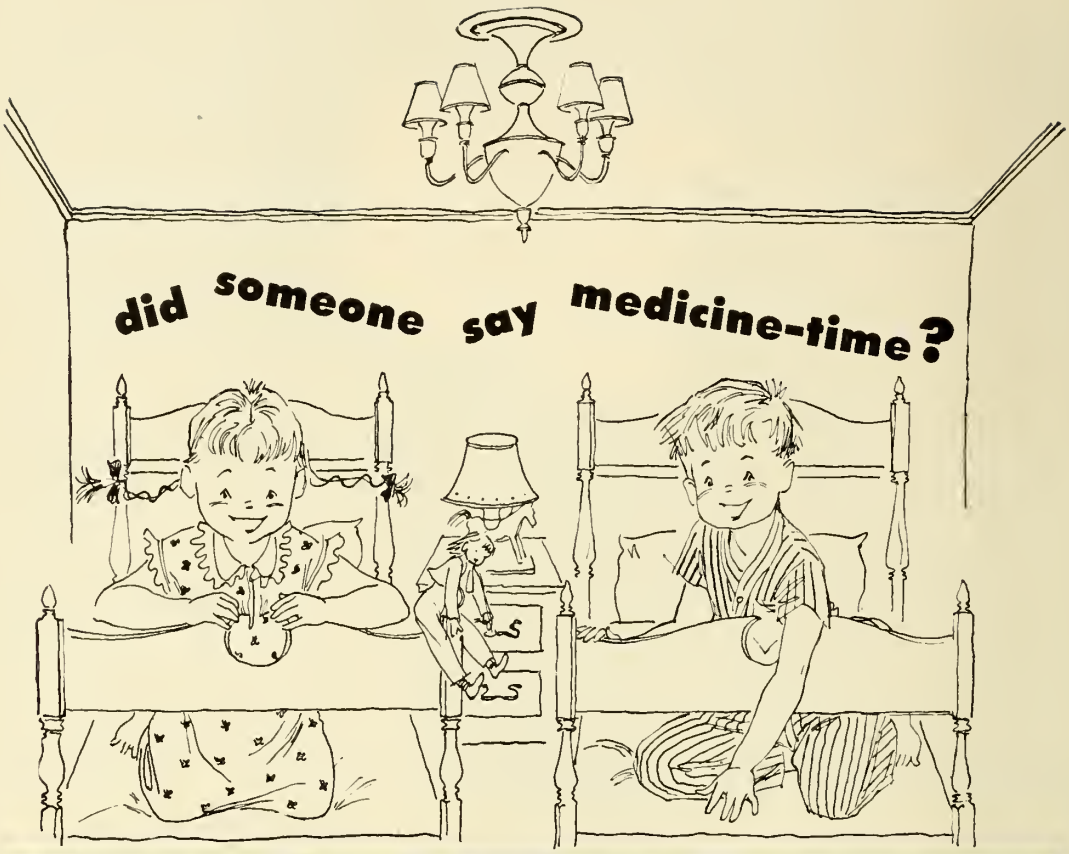
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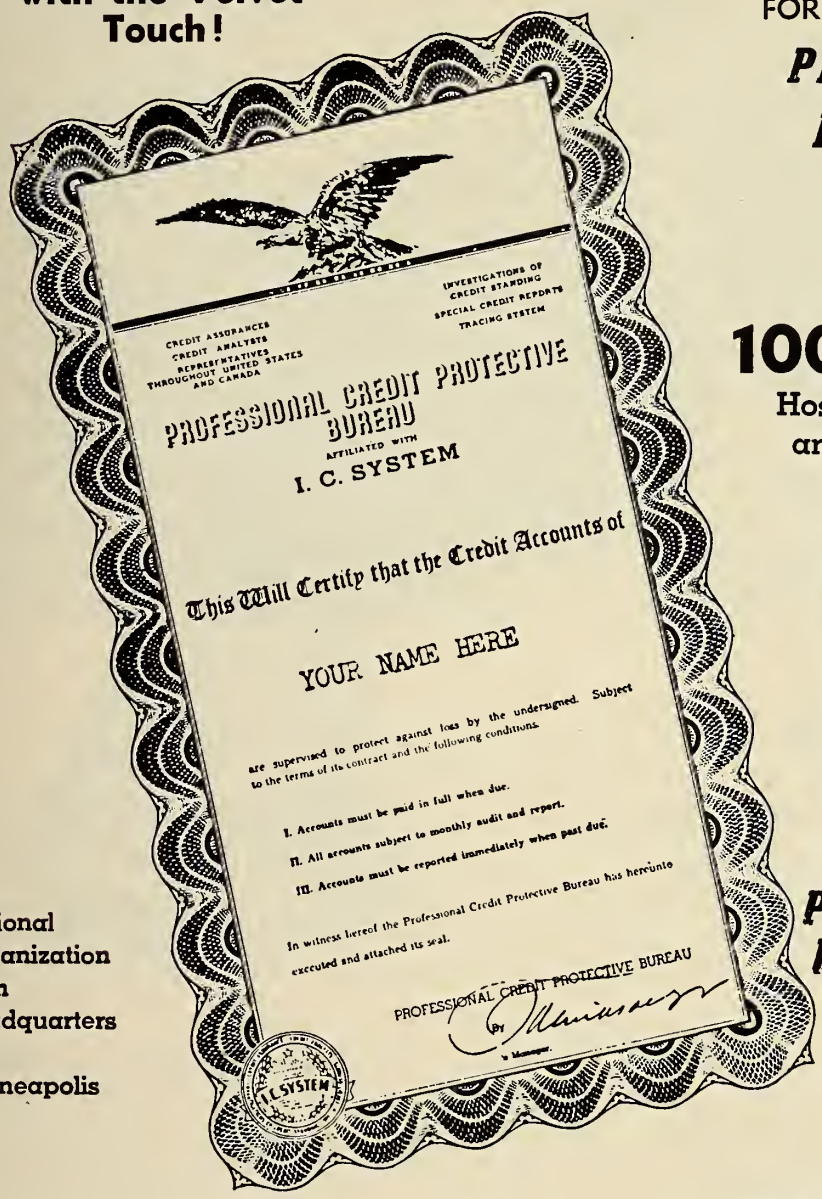
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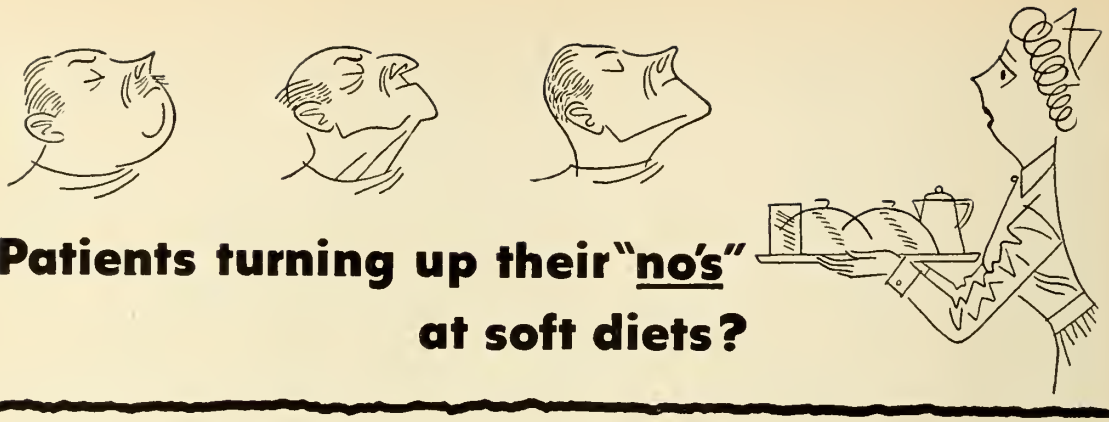


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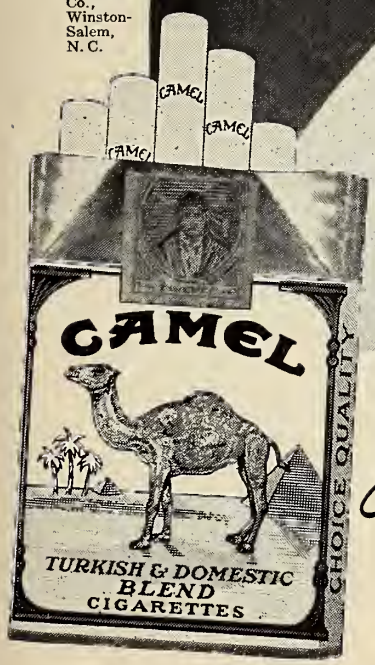
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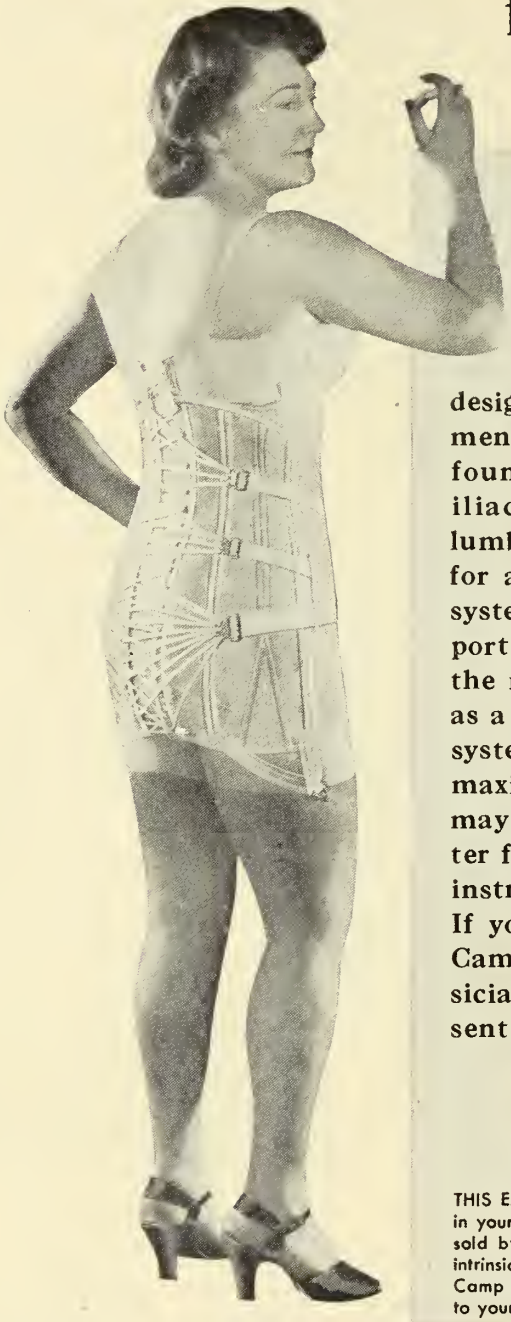


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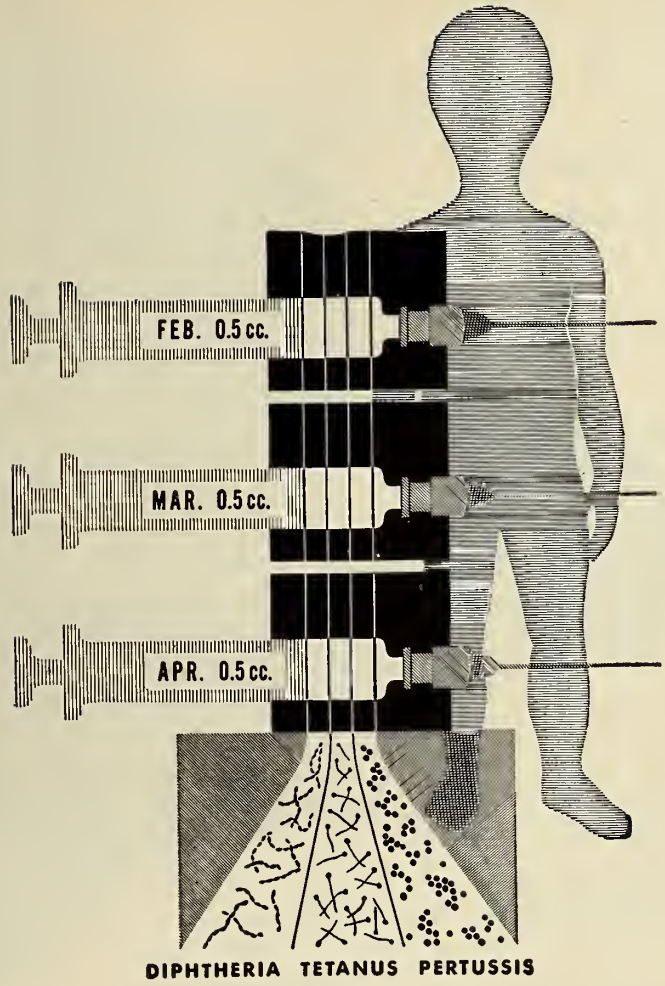
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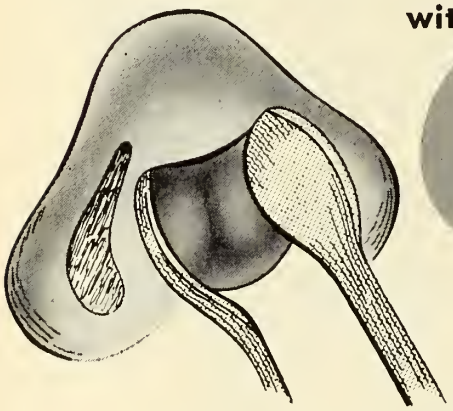
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Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 32 October, 1949 No. 10

AN APPROACH TO THE DISTINCTION OF MEDICAL AND SURGICAL JAUNDICE

C. J. WATSON, M.D.
Minneapolis, Minnesota

IN PLANNING this presentation, I purposely selected a rather cautious title, because of the many dangers which are inherent in this problem and of which I am sure most physicians are quite well aware. Despite a long interest in the subject of jaundice and the advantage of having had considerable and varied clinical material at the University hospitals, I would be the first to admit that the differential diagnosis of jaundice is by no means a closed chapter. In fact, it is being continually rewritten, and I have no doubt that important additions will be made in the not distant future.

As any physician must, I shall commence at the bedside with the history and physical examination. I shall not consider either of these areas exhaustively but only certain points that I believe need special emphasis. The history of pain, even of typical biliary colic, should not induce one to conclude too readily that there is a common duct stone. As have others, we have repeatedly encountered such attacks in cases of cirrhosis, less often in hepatitis, and still less frequently in patients with primary carcinoma of the common duct or ampulla. Distinct chills point rather clearly toward common duct stones, especially if accompanied by spiking fever. They may be met with, however, in cases of carcinoma of the ampulla or common duct with associated cholangitis, and they are observed at times in infectious hepatitis, but here they are largely limited to the pre-icteric or prodromal period, disappearing with the onset of jaundice.

One must, of course, give strict heed to any history of chemical exposure, especially to such substances as cinchophen or carbon tetrachloride, but in recent years a great deal of evidence has accumulated that the accidental transmission of the virus of homologous serum hepatitis, by means of parenteral therapy or even simple needle puncture, is a matter of no little moment to the whole problem of jaundice. The incubation period most often is between two to four months, although there are well-recognized exceptions on either side of this range. The possibility of homologous serum hepatitis must be seriously entertained in any individual who became jaundiced approximately three months after a procedure has been carried out which involved needle puncture. There is sufficient reason to believe that the virus may be transmitted by such simple means as needle puncture for blood cell counting or micro blood-sugar determinations, so that it behooves all of us to pay more attention to sterilization of our equipment.

I shall consider only a few points in the physical examination that I believe need additional emphasis. The first of these is the so-called foetor hepaticus, liver breath, or amine odor. The exact nature of this curious odor is still unknown. Its presence strongly suggests a diffuse parenchymal liver disease or medical jaundice, especially when it is outspoken and pervading the patient's

Presented before the Minneapolis Surgical Society, April 7, 1949.
From the Department of Medicine, University of Minnesota Hospital.
Aided by a grant from the Medical Research Fund of the Graduate School, University of Minnesota.

room. Even milder degrees, noticeable only during the close examination of the patient, are usually related to parenchymal jaundice rather than extrahepatic biliary obstruction. No one has been

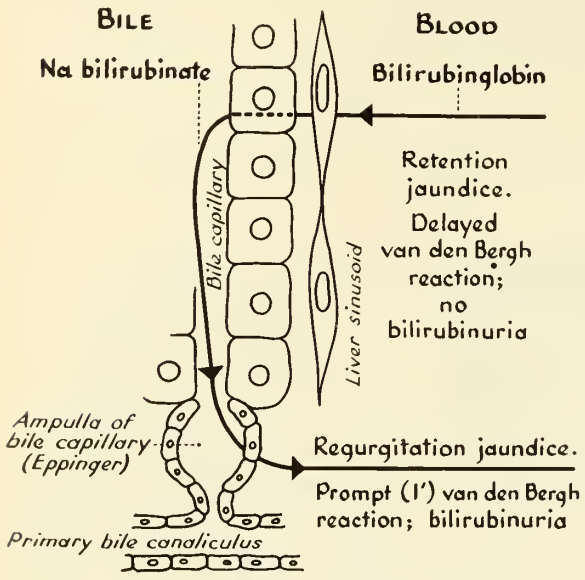


Fig. 1. Schematic drawing of pathological physiology of jaundice.

able to describe the odor with any precision, and some recognize it much more easily than others. It is ominous but not necessarily fatal in its significance.

The presence of multiple and especially of large spider nevi over the neck, shoulders, arms, hands, and upper thorax constitutes a physical finding which points clearly toward medical rather than surgical jaundice. These may appear with an acute hepatic injury and disappear with healing.

Most physicians are well aware, I am sure, that if the liver is demonstrably small or not significantly enlarged in the presence of marked jaundice, especially if the latter has been present for several weeks or longer, the cause is more likely to be a diffuse parenchymal disorder. It is perhaps less often appreciated that a markedly enlarged liver is not too uncommon in both hepatitis and cirrhosis as well as certain types of injury associated with fatty metamorphosis, so that increased size or even tenderness is of relatively little help in the differential diagnosis of jaundice. The most important physical sign of all is one that is too frequently overlooked, namely, that of the palpable, smooth, non-tender, distended gall bladder, a sign which is almost pathognomonic of carcinoma of the pancreas or main bile ducts. This is often referred to as Courvoisier's sign, but wrongly so, since Courvoisier was a pathologist and his statements[2] in this direction related only to the incidence of atrophic or shrunken gall bladders in cases of common duct stone, and of distended gall bladder in cases of cancer of the pancreas or bile duct. He called attention to the relative frequency of these two phenomena but did not offer his observations as a law nor describe a clinical sign. In this connection it should be emphasized that a markedly distended gall bladder may not be palpated at times, as in some instances it is well hidden below the right lobe of the liver and does not present against the abdominal wall. Thus the sign is of importance only when positive, but then it is of the greatest importance and should not be neglected. The distended gall bladder of this type is often visible as well as palpable, sometimes, in fact, being better seen than felt.

Splenic enlargement in a case of jaundice greatly favors a medical rather than a surgical type, but there are some exceptions, notably strictures of the common duct or common duct stones of long standing with secondary biliary obstructive cirrhosis.

The presence of melanosis of the skin in addition to jaundice is always suggestive of cirrhosis. This is frequently associated with a loss of axillary hair, and it is of some importance that cirrhosis of the liver is distinctly more common in relatively hairless individuals.

We may turn now to a brief consideration of the pathological physiology of jaundice with particular relation to laboratory diagnosis. This has been considered in more detail elsewhere.[10,14] The schematic drawing shown in Figure 1* is a somewhat oversimplified plan, embodying concepts for which the majority of available evidence speaks, and based in part upon the fundamental classification of jaundice provided some years ago by Rich.[8] In Figure 1 it is seen that a bilirubin protein complex is brought to the liver in the blood stream. As indicated in the figure, the protein to which this bilirubin is attached is probably the original globin of the hemoglobin molecule. This bilirubin complex has come directly from destroyed hemoglobin, either from old red

*Permission to publish this figure granted by Grune and Stratton, Inc., New York. C. J. Watson: Some newer concepts of the natural derivatives of hemoglobin. Blood, The Journal of Hematology, 1:99, 1946.

blood cells which are undergoing destruction every day in the reticuloendothelial system generally, or under pathological circumstances, from such areas as extravasations of blood or pulmonary infarcts. The formation of bilirubin is also increased, of course, whenever there is an increase in the rate of blood destruction, as in hemolytic anemias. In such instances the heightened bilirubin production is often mainly in the spleen.

Retention jaundice may be defined as an abnormal accumulation of the bilirubin protein complex in the blood—in other words, an hepatocellular inability to clear the blood of this substance. This type of bilirubin is characterized by a delayed or indirect van den Bergh reaction and by a failure of bilirubin to appear in the urine. Under normal circumstances bilirubin is excreted almost completely into the bile, the normal concentration in the plasma probably not exceeding 1.0 mg. per 100 c.c. In the process of excretion into the bile the combination with protein is broken. Bilirubin in the bile is in all likelihood a sodium salt. The majority of evidence indicates that bile containing this sodium bilirubinate may gain access to the blood either because of increased intrabiliary pressure or because of injury of the finer intrahepatic biliary radicals or cholangioles. This abnormal transit of bile into the blood is synonymous with regurgitation jaundice. The sodium bilirubinate in the blood is characterized by a prompt van den Bergh reaction. This substance readily passes into the urine. The prompt van den Bergh reaction is best defined as that which occurs within the first minute.[10] Thus, regurgitation jaundice is characterized by a prompt van den Bergh reaction and bilirubinuria. There is considerable evidence that the weakest point in the intrahepatic biliary tract—that from which the regurgitation under the circumstances mentioned is most likely to occur—is the ampulla of the bile capillary. Interestingly enough, Aschoff[1] spoke of this as the "Achilles heel" of the biliary tract. Studies by Eppinger[3] and by Ohno[7] and his associates bear out this concept. There is considerable evidence that the regurgitated bile first gains access to the lymph spaces and thence via the thoracic duct, or in part directly, to the blood.

While Rich's fundamental subdivision of jaundice into the two main forms, retention and regurgitation, is of considerable value as a primary method, it is insufficient from the practical standpoint of distinguishing medical and surgical jaundice, as may be seen in Table I. This has been discussed elsewhere.[11]

TABLE I. THE MAIN FORMS OF JAUNDICE FROM FUNDAMENTAL AND PRACTICAL STANDPOINTS

Retention jaundice—hepatocellular inability to remove bilirubinglobin from the blood. Hemolytic jaundice Constitutional hepatic dysfunction Mild hepatocellular injury	Medical
Regurgitation jaundice—cholangiolar leakage of bile to lymph and thence to blood. Infectious hepatitis Moderate or severe hepatic injury of various causes Hepatic cirrhosis Diffuse hepatic carcinomatosis, Hodgkin's disease, or lymphoblastoma	Medical
Extrahepatic biliary obstruction due to: Cancer and related conditions Calculus Stricture And with or without a secondary, obstructive biliary cirrhosis.	Surgical

It is noted in Table I that all of the types of retention jaundice are medical (except for the question of splenectomy in cases of hemolytic jaundice). It is also noted that there are many examples of medical jaundice in the regurgitation group, and this should be emphasized because it has often been thought that if the van den Bergh reaction on the blood serum is of prompt direct type and there is bilirubin in the urine, the patient is suffering from an extrahepatic biliary obstruction which requires surgical treatment. As a matter of fact there are fully as many and probably more cases of medical regurgitation jaundice. It should also be noted that all of the types of regurgitation jaundice listed are undoubtedly associated with some degree of retention jaundice, generally more with the medical and less with the surgical types.

Although I have been discussing the pathologic physiology and biochemistry of jaundice, we may still consider ourselves to be at the bedside since there are two simple laboratory tests which may be thought of as bedside tests. Both are procedures which the practicing physician can carry out in the home since they require but little equipment, and this is such that it can easily be carried in the physicians' bag; and what is fully as important, they require but little time for execution. The first is the simple test for bilirubin in the urine. The method which we prefer is the barium strip modification of Harrison's test.[12] The barium impregnated strip is held briefly in the urine sample to be tested. The urine runs up the strip by capillary attraction, and at the surface of the

urine any bilirubin which may be present is concentrated. One then drops upon this surface area one or two drops of Fouchet's reagent, and a green color appears if bilirubin is present. The finding

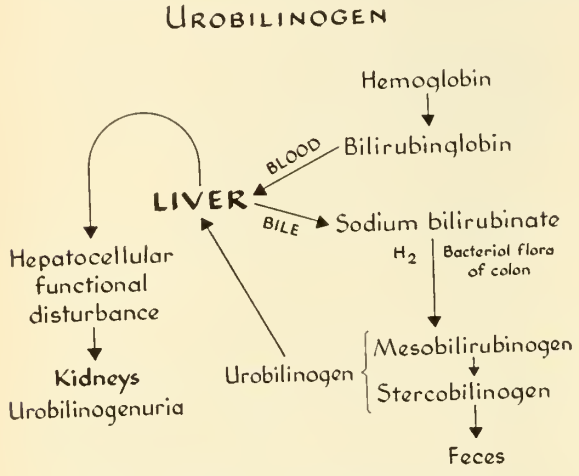


Fig. 2. Summary of urobilinogen physiology.

of bilirubin in the urine at once classifies the case in the regurgitation jaundice group but, as seen in Table I, it does not distinguish medical from surgical jaundice. It simply narrows the field.

The other bedside chemical test is the urine Ehrlich reaction to which urobilinogen is the main but not the sole contributor.[9,10,13,15] A brief summary of urobilinogen physiology is given in Figure 2.† Here it is seen that the sodium bilirubinate, to which we have already referred, is reduced in the colon to two chromogens, the composite of which is designated as urobilinogen. It is further seen that this urobilinogen is partly reabsorbed into the portal circulation returning to the liver. Under normal circumstances little or none of this reabsorbed fraction enters the general circulation, but, in most instances of hepatocellular functional disturbance, even though transitory, variable fractions are permitted to enter the general circulation and are excreted in the urine. In considering Figure 2, it may be noted that the feces Ehrlich determination,[13] or the determination of milligrams of urobilinogen per day in the feces,[9] which is preferable but is much more time consuming and difficult, gives an insight as to the interference in the outflow of bile from the liver. If there is complete biliary obstruction, as in cases of cancer of the pancreas, little or no urobilinogen is found in the feces. In cases of retention jaundice, the feces urobilinogen determination is of value because it serves to distinguish hemolytic jaundice in which the amount is significantly and often markedly increased.

The colorimetry of the urine Ehrlich reaction has been described in detail elsewhere[13,15] but may be summarized in Table II.

It will be noted in Table II that a urine sample collected from 2:00 to 4:00 p.m. is preferred. This is because of the fact that if an excessive amount of urobilinogen appears in the urine during a twenty-four-hour period, it is more likely to be observed in the afternoon, probably because of metabolic activity. The actual colorimetry which is referred to in Table II is of value in eliminating the personal equation in gauging the intensity of the color reaction and also for purposes of serial determination over a period of time. Further than this, if a short period sample covering a two-hour interval is employed, the factors of dilution and concentration are largely obviated. Nevertheless, a single observer, as for example a practicing physician, who cares to employ the simple qualitative test (line 1 in Table II) will be able to gain considerable information from it, especially if serial samples are employed. If the same individual is looking at the reactions, he is able to gauge fairly well the changes in intensity which may occur, and he can often draw valuable conclusions from these changes.

While it is true that the barium strip test for bilirubin in the urine and the urine Ehrlich reaction often, and in fact usually, do not permit a

TABLE II. COLORIMETRY OF URINE EHRLICH REACTION

2.5 c.c. of a urine sample (preferably the total amount obtained between 2 to 4 p.m. + 2.5 c.c. Ehrlich's reagent + 5 c.c. saturated aqueous sodium acetate solution.
2.5 c.c. of urine + 5 c.c. saturated aqueous sodium acetate solution + 2.5 c.c. Ehrlich's reagent. (This is the blank.)
Comparator block (pontacyl standard) or photoelectric colorimeter.
1 Ehrlich unit=color intensity of 1 mg. urobilinogen per 100 c.c.

TABLE III. SOME CHARACTERISTIC PATTERNS OF URINE EHRLICH AND BARIUM STRIP TESTS IN CASES OF JAUNDICE

	Urine Ehrlich	Urine Bilirubin	Type of Jaundice
1.	0	++++	Regurgitation jaundice; may be either medical or surgical. Little or no bile entering intestine.
2.	++++	0	Retention jaundice or liver disease without jaundice. Often noted in hemolytic jaundice; also in hepatic cirrhosis.
3.	++++	++++	Regurgitation jaundice; more likely medical, either hepatitis or cirrhosis.

†Permission to publish this figure granted by Annals of Internal Medicine. C. J. Watson and F. W. Hoffbauer: Liver function in hepatitis. Annals of Internal Medicine, 26:813, 1947.

definite diagnosis by themselves, they are nevertheless of considerable help in getting the examiner on the right track, when combined with the history and physical examination. What I mean by this is perhaps best indicated in Table III. This has been discussed in a previous communication.[11]

There is little doubt that one can often gain more exact information if the per diem urobilinogen excretion in urine and feces can be determined. The characteristic ranges are shown in Table IV.[11]

Unfortunately there are many cases of jaundice in which, despite a careful history, physical examination and the use of simple laboratory tests, the enigma persists and the question of medical or surgical jaundice has not been answered. If one would avoid a needless operation which may even prove to be the fatal straw in the case of severe parenchymal hepatic disease, or if one would not overlook a silent common-duct stone or a carcinoma that may be operable, it is necessary in such instances to turn to the laboratory for additional aid. Although I have not kept any exact records on the point, I am inclined to believe that 60 to 70 per cent of all cases of jaundice may be diagnosed at the bedside without the aid of any special laboratory methods. The use of the latter probably increases one's efficiency to from 85 to 90 per cent.

One has had to recognize in studying liver function clinically, and especially with respect to difficult problems of jaundice, that it is necessary to make a composite study rather than to pin one's faith on but one or even two so-called liver function tests. For some time we have used rather routinely and with considerable satisfaction, two liver function schedules: No. 1 for the non-jaundiced, and No. 2 for the jaundiced patient.[14] The No. 1 schedule includes the fractional serum bilirubin, the barium strip test for bilirubin in the urine, the thymol turbidity test (which probably relates in the main to increases of lipo-β-globulin),

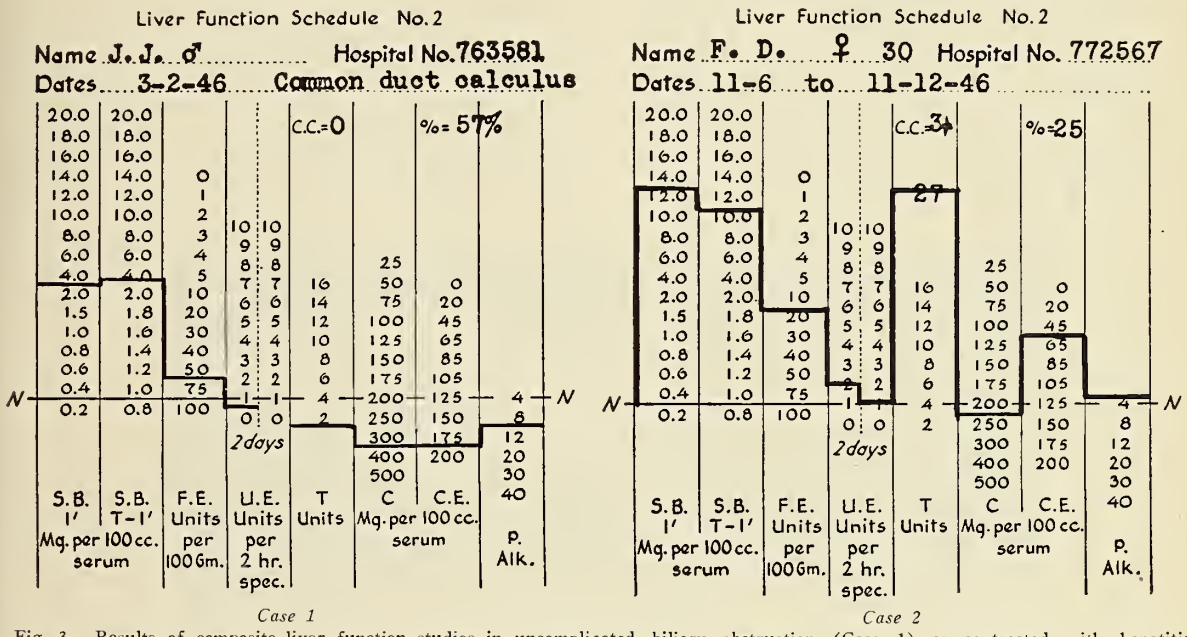


Fig. 3. Results of composite liver function studies in uncomplicated biliary obstruction (Case 1) as contrasted with hepatitis (Case 2).

TABLE IV. UROBILINOGEN EXCRETION

Type of Jaundice	Feces	Urine
Retention:		
Hemolytic jaundice	Markedly increased	Normal to greatly increased
Constitutional hepatic dysfunction	Normal	Normal or slightly increased
Regurgitation:		
Biliary tract cancer	$<$5 mg. per day in 90% of cases	$<$0.3 mg. in 90% of cases
Calculous	$>$5 mg. per day in 90% of cases	Normal to greatly increased (with complications)
Parenchymal (hepatitis, cirrhosis, or other diffuse liver disease)	Majority of cases $>$5 mg. per day. Some have less for several days or weeks at height of disease. Feces-urine ratio important: Ex. { 10 mg. 5.0 mg. / 600 mg. 500 mg.	0-300 mg. Depends largely on stage of disease.

the Hanger cephalin cholesterol flocculation test (which relates mainly to abnormalities of the serum albumin and increases of γ-globulin), and the bromsulfalein retention in per cent at forty-five minutes after intravenous administration of 5 mg. of the dye per kilogram. In addition, the urine Ehrlich reaction (Table II) is determined on two successive days. If not significantly increased, the urine urobilinogen in milligrams is determined on a twenty-four-hour sample, and on this sample the urinary coproporphyrin is also determined. Schedule No. 2, with which we are more particularly concerned in the distinction of medical and surgical jaundice, omits the bromsulfalein test and the urinary coproporphyrin and includes the serum total cholesterol and cholesterol esters, and the serum alkaline phosphatase. This schedule is shown in Figure 3, with the data from illustrative cases. The horizontal line between the N's represents the usual normal or upper limit of normal for the various determinations. The values above this line indicate functional impairment, especially of hepatocellular type. The cephalin cholesterol flocculation test is indicated and recorded simply as 0 to 4-plus at the top of the thymol turbidity column. The key for the various determinations is seen at the bottom of the figure.

The findings for Case 1 in Figure 3 may be said to characterize a surgical jaundice, in other words, a pure cholangiolar functional impairment with little or no evidence of hepatocellular injury. By contrast one may note the findings in Case 2 (Fig. 3). This is a profile from a case of homologous serum jaundice. It was of interest that this patient, a housewife, aged thirty, had had a cholecystectomy about four months previously. This was followed by a wound abscess, at which time the patient was given three blood transfusions. She then appeared to recover and felt quite well for a period of three months. At the end of this time she became jaundiced without pain or fever, and after several weeks of jaundice was referred to the University Hospital in the belief that she might require an operation to remove a common duct stone. The composite liver function study, however, clearly revealed extensive diffuse hepatic functional impairment. As noted in Figure 3,** the liver profile of Case 2 indicates marked regurgitation jaundice with almost complete exclusion of bile from the intestine, a severe disturbance of the plasma proteins, thymol turbidity greatly elevated, and a positive cephalin cholesterol test, little or no elevation of the total cholesterol in spite of marked evidence of regurgitation jaundice, and a low cholesterol ester percentage, also a low normal alkaline phosphatase (this should be considerably elevated if jaundice of this degree were due to simple biliary obstruction such as a common duct stone). A liver biopsy was done which showed a rather marked diffuse hepatitis and cirrhosis, clearly not the type of change that one would expect with an extrahepatic biliary obstruction. As a consequence of these findings an operation was avoided. With supportive treatment the patient improved considerably, although it seems unlikely that the liver will ever return completely to normal.

Hoffbauer, Frame, and Meinert[4] have recently analyzed the experience in this laboratory with the non-pigment group of determinations included in schedule No. 2 (Fig. 3). This study, which was limited to proven cases of medical or surgical jaundice, clearly reveals the relative value of the cephalin cholesterol flocculation, the thymol turbidity, the total cholesterol, cholesterol ester percentage and alkaline phosphatase determination, and of certain combinations of these procedures. I shall not consider their results in any detail, as anyone who is interested may study them in the original. It is sufficient to say that the total cholesterol and cholesterol ester ratio and the alkaline phosphatase were about of equal value in the distinction, each of the three showing considerable overlapping—in other words, results contradictory to the proven diagnosis. The cephalin cholesterol flocculation was the most reliable, exhibiting the least positivity in surgical jaundice and the greatest in medical jaundice. The results of the thymol turbidity test approximated those of the cephalin cholesterol flocculation, but it was of particular interest that the combination of the two tests was most reliable of all. In seventy-seven cases of proven extrahepatic biliary obstruction, in other words of surgical jaundice, only one had both tests positive. Nevertheless, there were a considerable number of cases of parenchymal jaundice in which one or both tests were negative. Recent work indicates that the zinc turbidity test of Kunkel[5] is less likely to exhibit "false" negatives in this group.

(References on Page 1000)

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MELORHEOSTOSIS

A Case With Monomelic Distribution

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MELORHEOSTOSIS is a rather rare form of osteosclerosis in that the bone changes in the involved area present a hyperostosis of a flowing type. In 1922, Leri and Joanny[22] reported the first case. They named it melorheostosis (Greek: *melos*—member, *rhoia*—to flow, and *os*—bone) because the hyperostosis appeared to flow down the bones as molten wax running down the sides of a candle. Although the term melorheostosis is most generally used, some authors have applied various names to describe the condition: Leri's disease,[49] rheostosis,[48] osteosis eburnisans monomilica,[34,40] osteopathia hyperostatica congenita unius membri,[49] rhizomonomelorheostosis,[49] monomelic flowing hyperostosis,[35] and others.

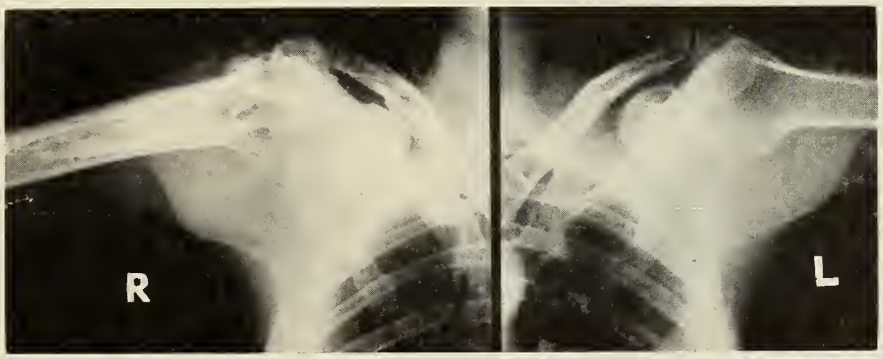


Fig. 1. The acromion process, coracoid process, and neck of the right humerus show areas of irregular, trabeculated hyperostosis with normal density between them. The neck of the scapula is normal. The upper end and head of the humerus show areas of increased and decreased density with trabeculae and bands of subperiosteal hyperostosis traversing the shaft of the bone in linear, wavy lines distally.

Case Report

H. H., a sixty-one-year-old married white male farmer, was seen at the Clinic on February 11, 1946, complaining of pain in the abdomen after eating. The pain, which was mild, had been noticed for several months and was not aggravated by fried or fatty foods, cabbage or cole-slaw. On physical examination the patient appeared well nourished and well developed. The positive findings revealed slight tenderness over the epigastrium, severe varicose veins of both legs, with associated areas of skin discoloration above the ankles. Cholecystography revealed a non-functioning, pathological gall bladder for which operation was advised. The test meal showed normal values. Roentgenological examination of the stomach and the colon was negative. X-ray examination of the chest showed some hypertrophy and enlargement of the left ventricle. Lung fields appeared clear. Atypical osteosclerotic changes were observed in the upper end of the right humerus and scapula. The patient had never complained of his right arm and the family history was essentially negative. Examination and measurement of the patient's arms showed no difference in size or length. No limitation of joint movement or elicitation of rheumatic pain was found.

Roentgenological Findings.—Further roentgenological studies of the right shoulder, arm, forearm and hand were therefore taken and, as shown in Figures 1, 2 and 3, revealed a flowing type of osteosclerosis extending from the right scapula, along the anterior and lateral aspects of the humerus, radius, navicular, greater and lesser multangular, first metacarpal and all the phalanges of the right first digit. The acromion process, coracoid process, and neck of the right humerus showed areas of irregular, trabeculated hyperostosis with normal density between them. The neck of the scapula was normal. The upper end and head of the humerus showed areas of increased and decreased density with trabeculae and bands of subperiosteal hyperostosis traversing the shaft of the bone in linear, wavy lines. These smaller bands tended to unite in the upper third of the anterior and lateral aspect of the humerus and flow down the shaft to the supracondylar area. In many places the medullary cavity was encroached upon by the osteosclerotic condensations. Along the humeral shaft, irregular punched-out areas occurred in the region of hyperostosis. There was considerable cortical thickening in the mid-humeral shaft. These proliferative changes ended abruptly just above the lateral epicondyle, and the

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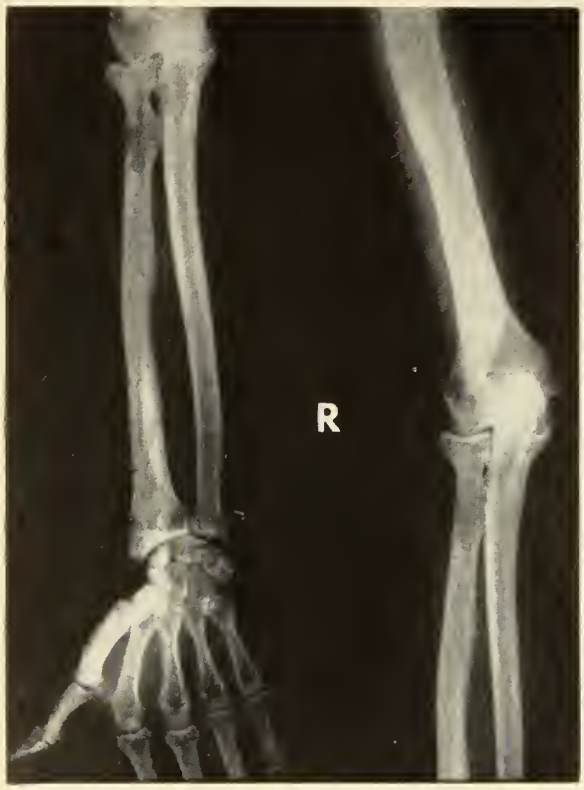


Fig. 2. Small bands of hyperostosis tend to unite in the upper third of the humerus on the anterior and lateral aspect of the shaft and flow down the shaft to the lateral supracondylar area. The elbow joint and periarticular structures are free of the pathology. There is considerable cortical thickening in the mid-humeral shaft with concomitant encroachment upon the adjacent medullary cavity. Similar changes are seen to involve the entire length of the right radius. A rather dense plate of bony hyperplasia is shown in the distal end of the radius just under the articular cartilage. No changes are observed in the right ulna.

elbow joint and periarticular structures were free of any pathologic condition. Similar osteosclerosis was observed in the entire length of the right radius. No changes were observed in the right ulna. A rather dense plate of bony hyperplasia was noted in the distal end of the radius just under the articular cartilage. Moth-eaten but osteosclerotic navicular, greater and lesser multangular bones were seen. The entire shaft of the first metacarpal and phalanges of the first digit were involved with an increase in diameter of the distal phalanx. No joint involvement or calcification in the adjacent soft parts was seen. A diagnosis of melorheostosis with monomelic distribution was made. Distribution of the osteosclerosis is shown in the sketch in Figure 4. Roentgenographic re-examination six months later showed no changes in the involved extremity. Roentgenographic examination of the skull, spine, pelvis, left shoulder, arm and forearm, and lower extremities did not reveal any pathologic process in these areas.

Laboratory Findings.—Blood studies, urinalysis, blood chemistry including calcium, phosphorus, serum phosphatase, plasma proteins, urea nitrogen, serology, sputum, and electrocardiographic tracings were within normal limits. A biopsy of bone was not obtained.



Fig. 3. The hyperostosis involves the navicular, greater and lesser multangular bones of the wrist, the entire shaft of the first metacarpal and the phalanges of the first digit of the right hand. The left hand and wrist are shown for comparison.

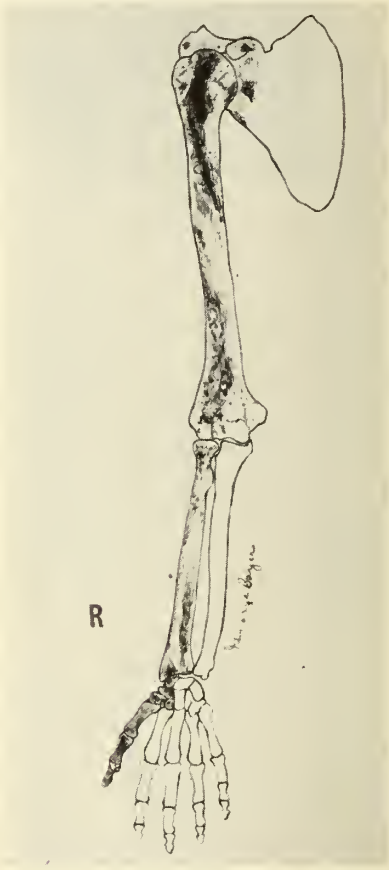


Fig. 4. A drawing showing the distribution of the hyperostotic lesions in the right upper extremity of the case herein reported.

This patient made an uneventful recovery following his cholecystectomy and returned to his farm, where he has been actively engaged since. He has been seen twice since then and re-examined because of the presence of melorheostosis. During this period of observation no

changes in the extent of the osteosclerosis or demonstration of weakness, pain or atrophy of the involved arm have been noted.

Review of the Literature

In 1921, Leri and Joanny[22] described, named and reported the first case in a thirty-nine-year-old woman with a bony deformity of her left hand.

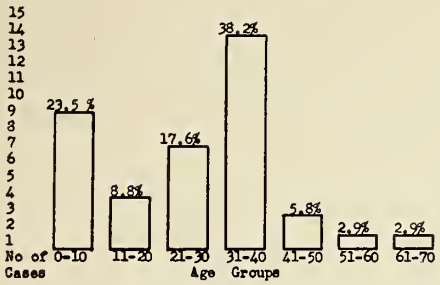


Fig. 5. Distribution of thirty-four cases of melorheostosis by age. Thirteen other cases have been reported or have appeared in the literature, for which the original articles have not been available to the authors or for which the abstracts do not give the age.

In the next ten years a total of fifteen cases were reported.[16,17,18,26,28,29,30,34,36,39,40,41, 46,47,52]

Four cases were reported in 1932,[42,48] and Kraft,[20] in an excellent paper, added two cases of his own to the literature and summarized, in tabular form, all the previously reported cases of melorheostosis. At the Bone Tumor Conference in 1932 at Johns Hopkins University, Parmalee presented a case of melorheostosis which was not published, but was referred to in a published paper on this subject by Widmann and Stecher in 1935.[49]

During 1933 five more cases were reported.[20,35,43,51] In Kraft's second paper,[21] on the pathology of this disease, he refers to a personal communication with Dr. Sussman regarding a case which the latter had seen diagnosed as marble bones. Reference is also made in this report to a case of melorheostosis seen in St. Louis, Missouri, by Sherwood Moore. Neither of the above cases has been published. Kraft[20] refers to and reports on a case in a man seen by Sante in 1923. Bury[4] refers to Sante's case in his report also.

From 1934 to 1940, twelve new cases were reported.[1,3,4,7,8,9,11,13,14,37,44,49] Two of these cases were associated with scleroderma.[8,14]

Kibby[19] in 1941 reported the youngest case found in the literature. His case occurred in a five-year-old Japanese girl. In 1942, Franklin and Matheson[10] reported a case and reviewed the literature. Carpenter, Baker and Outland[6] reported a case with bilateral involvement and also referred to a case seen at Johns Hopkins Hospital and another at Boston City Hospital. However, these last two cases have not been reported in the literature.

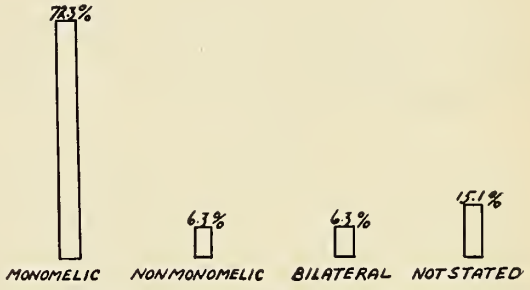


Fig. 6. Distribution of lesions in forty-seven cases of melorheostosis.

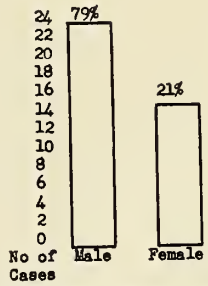


Fig. 7. Distribution of thirty-seven cases of melorheostosis by sex. Ten other cases have been reported or have appeared in the literature, for which the original articles have not been available to the authors or for which the abstracts do not give the sex.

LeVay,[27] Gottlieb,[12] Stutz[45] and Bade[2] reported additional cases. Canigioni[5] discussed the disease and Muller-Alberti[50] published a paper on the clinical aspects, etiology and pathogenesis of melorheostosis.

A total of forty-six cases are known which, together with this case, makes a total of forty-seven to date.* Kibby[19] reported the youngest patient, aged five; one patient was observed for fourteen years. The average age, in those patients whose age is known, is twenty-eight years. The most frequent age period is thirty to forty years, as shown in Figure 5. Thirty-four cases were monomelic, five non-monomelic, and eight not stated, as shown in Figure 6. Three patients

*Since this paper has been in the process of publication, Sear[43a] has reported a case of melorheostosis associated with leontiasis in which the melorheostosis involved the right side of the body of the eleventh thoracic vertebra and the corresponding rib. Fejer[9a] reported the forty-ninth case in 1948.

showed bilateral involvement. The upper limb was involved nineteen times, the lower limb twenty times. In several cases the involvement was not stated. The case of Stutz[45] involved only the pelvis. In twenty-three cases males were affected; females in fourteen; sex was not stated in ten cases, as shown in Figure 7. Biopsies have been done in only six cases. No autopsies have been reported. Countries where cases have been found, in the order of frequency, are the United States, Germany, Italy, France, England, Sweden, Poland, Russia and Switzerland.

Etiology

Although the exact cause of melorheostosis is unknown, many theories have been advanced to explain the etiological factors which produce the disease. Leri,[22] who believed that an infectious agent was causative, was unable, after repeated attempts, to isolate one. Putti[40] thought that a primary imbalance of local sympathetic nerves caused a secondary vascular angiospasm and later obliterative effects along the course of nutrient vessels. Hyperostotic changes along the affected vessels resulted. Other men adhered to a neuropathic theory, but were unable to prove it because exact neural pathways were not established. Endocrine imbalance, heredity, body fluid imbalance and constitutional states have all had their advocates, but cannot be proven. Tuberculosis, syphilis, malignancy and other disease processes have been ruled out. Zimmer[52] has many adherents for his theory of metameric disturbance in the embryo. Widmann and Stecher adhere to Zimmer's concept and, in reporting their case, make note of the fact that a bony deformity was present at birth. A newer idea has been advanced by Moore and DeLorimier.[35] They believe that, in the embryo or later, subperiosteal telangiectasis develops and causes local petechial hemorrhages in the bone. Secondary vascular obliterative changes follow resulting in further telangiectasis. The osteosclerosis represents a reaction to the vascular changes and hemorrhage.

The further study of these and other cases to be found may aid in solving this mystery.

Pathology

Very little is known of the pathology, either gross or microscopic, of this disease. Only six cases have had a biopsy study and no cases have been reported to have come to the autopsy table.

In general, the bones of one limb (monomelic) are involved, with linear bands of hyperostosis extending from the shoulder to the distal phalanges of the hand or from the pelvis to the toes of one leg. In the lower leg and forearm usually only one of the bones is involved, and in the hands and feet the disease is usually limited to one side.

Grossly, the essential findings in involved bones consist of dense bands of sclerotic new bone. The new bone may be endosteal, periosteal or both. Areas of normal bone supervene. Periosteal hyperostosis may cause increased thickening of the cortex and subsequent increase in the width of the bone. Rough, irregular contour of bones results. Widmann and Stecher believe that endosteal sclerosis is found in early developing lesions. Bowing of an affected femur was explained by Moore and DeLorimier as an impingement on muscle origins or insertions by the hyperostosis. This altered the muscle contraction and physiological cross section. They explain the clinical findings of progressive muscular weakness on this surmise. Several orthopedic surgeons have encountered bones diseased by this entity and have described them as very hard and sclerotic in most instances. The tendency of the hyperostotic bands is to spare joints, although in some cases severe involvement of adjacent bones or calcifications in periarticular structures leads to diminution of joint mobility. Many bones are shortened by the disease, and this is borne out by the number of cases of shortened arms, legs and pelvic obliquities. Leri and Joanny's patient, when examined several years later, revealed calcifications in the periarticular structures of the right shoulder joint. No cases have been reported in which there have been spontaneous fractures.

The association of melorheostosis with other conditions has been rare and probably of no significance. In several cases there has been a positive serology. In Hall's case there was an associated tuberose sclerosis. Scleroderma was found in the involved limb in the cases of Dillehunt and Chuinard, and Gillespie and Siegling.

Histology

Little has been written concerning the microscopic findings, since there has been a biopsy in only six cases. In Leri's case a primitive bone marrow was described together with interspersed islands of cartilage between crowded, irregular abnormal osseous lamellae and haversian canals.

Some writers have found a similar bone marrow. Others describe a dense ivory-like growth of bone with meager cellular structure. Junghagen believed the finding of concentric lamellae around the haversian canals pointed to an important clue in arriving at a diagnosis. Medullary encroachment by the hyperostotic bone was found in several cases. There was a tendency toward replacement of the fatty bone marrow by fibrosis. In general, the microscopic picture is so bizarre that no one could make a specific diagnosis of this disease from a biopsy study alone. The lesions are benign and have not shown any tendency toward malignancy in those few cases studied.

Clinical Findings

This discease is insidious in onset, chronic in nature with periods of arrest lasting many years in some cases, and presents, in general, bizarre or vague symptoms. In most cases the bones of one extremity are involved—monomelic. Prognosis is good. Physical findings do not point to any symptom complex which one could say was pathognomonic of melorheostosis. Bony deformity has been noted at birth in several cases. Mild and vague pain in involved limbs was usually noted, and it is amenable to physiologic rest. In patients with limp and weakness of a limb due to pelvic deformity, orthopedic procedures were of value. Stasis of blood vessels in affected parts, secondary to the encroachment of hyperostotic bone, results in edema, skin changes, and to ulcerations of the skin.[10]

Usually the patient has such minimal complaints that medical advice is not sought. As the disease slowly advances, the symptoms become more annoying and of a continuous rather than intermittent nature. Some patients, with shortening of limbs, atrophy of soft tissues or gait disturbance, seek medical advice and are diagnosed on roentgenological study. Few cases have been diagnosed without the aid of the roentgen film.

The first vague symptoms of low-grade pain or slight deviation of the involved fingers or toes are usually found in childhood. Later in life the pain becomes more severe, the deformity increases or becomes disabling and soft tissue atrophy and shortening of the limb ensue. These symptoms are sporadic and may cease for long periods of time. Some patients never complain of anything. Ankylosis of the joints is rare and occurs only late.

Laboratory aids in diagnosis have been disappointing Blood chemistry studies, serology, urine, et cetera, have, in nearly every case, given normal values. Imbalance of blood calcium and phosphorus has not been noted. In the differential diagnosis, however, the laboratory findings are important in ruling out other conditions.

Roentgenologic Findings

There is a paucity of definite clinical findings in this malady, and its most characteristic finding is the vagueness of symptoms. For this reason an accurate diagnosis can be made only upon roentgenologic findings. Where this disease is found, the entire skeleton should be studied roentgenologically. The finding of melorheostosis, in the author's case, was an accidental finding since the patient had never complained of symptoms in his right arm. Examination, with roentgenologic study, done seven months later revealed no changes in the involved extremity.

In the majority of cases—monomelic—the essential finding is an extensive flowing hyperostosis which appears to extend in dense, wavy lines along one side and down the bones of the involved limb. The cortex appears dense, thickened and ivory hard. Areas of translucency may be present, especially near the joints. The joints are usually not affected. Medullary encroachment is seen somewhere in the bones of the diseased limb in nearly every case. Where the pelvis, skull or vertebrae are involved, the hyperostotic areas are usually patchy and poise more of a differential point. The new bone may cause the cortex to thicken up to 3 centimeters in the long bones. The bands of sclerotic bone do not always extend continuously along a bone, but commonly are broken up leaving areas of normal or atrophic bone between them. Where the forearm or lower leg are affected, usually only one of the double bones is involved. In general the epiphyseal structures are free of the sclerosis. Isolated patches of irregular hyperostosis most commonly are found near the bone ends adjacent to the flowing band of sclerosis. In many-faceted bones, as in the carpal or tarsal bones, the sclerosis tends to occur in opposing surfaces of two involved bones. In the most commonly seen cases, where an entire single limb is diseased, the radiographic picture is most characteristic, since the bands of sclerosis extend distally in nearly straight lines from the top to the bottom of the limb. In nearly every case

studied there appears to be a pattern of selective involvement. Punched-out areas and moth-eaten patches are seen involving the condyles of the long bones. In a few instances laminations of hyperostosis have been present parallel to the length of the shaft of the bone.

Calcification of the periarticular structures has been reported and is not uncommon in melorheostosis. Pathological fractures have not been reported.

Differential Diagnosis

In the majority of cases, where an entire extremity is involved, the typical roentgenologic findings, together with a careful history and physical examination, are all that is needed to make a correct diagnosis. This is especially true if the condition is present in the mind of the roentgenologist or attending physician. The vagueness of symptoms should prompt an x-ray examination and if, following this, osteosclerotic areas are found, one should proceed to examine the entire skeleton.

Since the condition is so chronic, one should rule out tuberculosis and luetic osteitis by history, serological and other proper laboratory tests. History will aid in ruling out infectious and post-traumatic ossifying periostitis. Soft tissue atrophy and shortening of the involved limb in many cases are commonly associated with the typical osteosclerotic changes in melorheostosis. Although calcification in periarticular structures does not occur in some cases of long standing melorheostosis, the concomitant osteosclerosis in adjacent bones should differentiate it from myositis ossificans and calcinosis. In calcinosis the calcium deposits are irregularly scattered in adjacent soft tissues and commonly are associated with trophic skin changes, or the calcium deposits may be extruded through the skin periodically.

The roentgenologic study and clinical findings of primary and secondary bone malignancy seldom present such a picture of a flowing hyperostosis. Piergrossi[39] thought that in studying melorheostosis one should always consider such atypical osteosclerosis as osteopoikilosis, Albers-Schönberg's disease, Paget's disease of the bone, chronic osteomyelitis and Garre's nonsuppurative sclerosing osteomyelitis. In osteopoikilosis or spotted bones the distribution is more general, is not limited to one side of a bone, and the lesions are made up of disseminated bone islands within the bone and are not expansive. Albers-Schönberg's type of osteosclerosis involves large or entire parts of the bony skeleton with universal encroachment upon the marrow cavities, generalized and not regional involvement, resulting in very brittle bones which usually fracture spontaneously, and severe anemia due to loss of bone marrow. If only a portion of an involved bone is seen, as the upper humerus in a routine chest film, one would have to consider Paget's disease of the bone as a good possibility. Upon further roentgenologic study, however, the picture of melorheostosis is so typical that one would have no difficulty. Chronic osteomyelitis shows no predilection for regional involvement, does not show osteosclerosis along one aspect of a diaphysis, and gives a different history and clinical findings. This is also true of Garre's nonsuppurative sclerosing osteomyelitis.

Treatment

Rational, definitive treatment is at present unknown, since an exact etiology is lacking in this condition. To date, symptomatic treatment for pain, edema and disability have been given. On the basis of the theory of Moore and DeLorimier[35] that this entity is caused by subperiosteal telangiectasis, Widmann and Stecher[49] and others have attempted roentgen radiation therapy on their cases. The results of this type of therapy have not been found in the literature. In several cases associated with concomitant scleroderma, massage was found to ameliorate the skin changes. In several cases where gait disturbances were present because of the severity of the osteosclerosis, orthopedic surgical procedures have been accomplished with favorable end results.

Summary

1. Melorheostosis is a rather rare type of osteosclerosis, tending to involve one extremity. Thirty-four cases were monomelic, five non-monomelic, and eight unknown. The youngest and oldest patients were five years and sixty-one years, respectively. Males were involved twenty-three times, females fourteen; sex was unknown in ten cases. The average age in patients whose ages were known was twenty-eight years, and the most frequent age period was thirty to forty years. Three patients showed bilateral involvement.

2. Including the authors' report, forty-nine cases have been reported in the literature or observed and referred to in published reports on the subject.

3. The case of a sixty-one-year-old man in whom the entire upper extremity showed involvement is here reported. This is the oldest patient found in the literature. No complaints relative to the disease were elicited upon study of the case.

4. A chronological review of the literature is given.

5. The exact etiology of the disease is unknown. However, a brief summary is given of the several theories advanced to substantiate various authors' concepts as to cause.

6. Gross pathological findings may include thickened bones, bones with irregular contour, bowed long bones, shortened extremities, atrophy of muscles in an involved limb, associated skin changes overlying the osteosclerosis, and impaired vascular efficiency. Gait disturbances result where severe sclerosis has caused impaired joint mobility. Bones encountered by orthopedic surgeons were described as hard and sclerotic. Pathological fractures have not been reported. Joints are rarely involved. The disease tends to involve an entire extremity.

7. In only six cases has there been biopsy study. No autopsy findings have been reported. The microscopic picture is bizarre and does not present a diagnostic picture.

8. The symptoms, in general, are vague, insidious, intermittent, or may be absent entirely as in the authors' case. Prognosis is good and the disease is benign. Physical findings do not point to any symptom complex pathognomonic of melorheostosis. Usually the patient complains of low-grade rheumatic pains in one limb with secondary loss of strength. In severe cases limitation of motion in a joint may develop. The deviation of an involved digit, even at birth, is commonly reported and should put one on his guard for this disease. Associated soft tissue atrophy and bony atrophy is very common. Laboratory findings to date have been negative, but are important in ruling out other conditions.

9. An accurate diagnosis can be made only upon roentgenological examination. The entire skeleton should be studied. A brief differential diagnosis is given.

10. No rational definitive treatment is known. Symptomatic relief has been employed. The results of roentgen ray therapy have not been evaluated.

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MULTIPLE MYELOMA

A Review of Ninety-five Proven Cases With Seventy-five Autopsies

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IN RECENT years there have been several extensive articles[1,2,4,5,6,8,9,11] covering the subject of multiple myeloma in its various clinical and hematological aspects. The following report is based on a study of ninety-five proven cases of multiple myeloma. Seventy-five of the cases represent autopsies. The diagnosis in the remaining cases was confirmed by sternal aspiration.

Age and Sex

Males predominated, there being seventy-one to twenty-four females. In spite of a higher incidence of men in autopsy cases as a whole, the disease appears to be considerably more common in men than in women. The age incidence is shown in Table I.

TABLE I.

Age	No. of Cases
31 to 40 years	7
42 to 50 years	14
51 to 60 years	27
61 to 70 years	36
71 to 80 years	11

Bence-Jones Protein

Bence-Jones protein was demonstrated in the urine of twenty-three of fifty-four cases (42 per cent). There appeared to be no relationship between the level of total plasma proteins and the presence or absence of Bence-Jones protein in the urine, as Bence-Jones protein was found in the urine of 40 per cent of nineteen cases with hyperproteinemia and in 33 per cent of twelve cases with normal total plasma proteins. Most of these results were based upon the demonstration of Bence-Jones protein in a single specimen of urine.

Plasma Proteins

In fifty cases in which the plasma proteins were studied, an elevation of the total proteins ranging from 8.4 to 15.3 grams per cent was found in thirty-two cases (64 per cent). Fractional protein studies in thirty of these cases showed hyperglobulinemia ranging from 3.9 to 12.5 grams per cent in twenty-five cases. Three cases showed a hyperalbuminemia of from 7.3 to 8.0 grams per cent.

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Serum, Calcium, Phosphorus, and Alkaline Phosphatase

The osteolytic bone lesions are often associated with excessive renal excretion of calcium. Serum calcium levels in thirty-seven cases ranged from 7.9 mg. per cent to 23.7 mg. per cent. The serum calcium was above 11 mg. per cent in twenty-two of the thirty-seven cases (60 per cent). In sixteen cases (42 per cent), the serum calcium was above 12 mg. per cent. There was no correlation between the level of the serum calcium and the level of the serum proteins. Some of the highest calcium levels were associated with normal or low levels, and vice versa.

The serum phosphorus level was either normal or increased in twenty-two of twenty-four cases. In eleven of the twenty-four cases it was elevated (4.4 to 7.8 mg. per cent). Hypophosphatemia associated with hypercalcemia was found in only two of the twenty-four cases. An elevated serum calcium and elevated serum phosphorus was found in six of the twenty-four cases. In all six of these cases there was renal insufficiency. The presence of normal or increased phosphorus levels in cases of multiple myeloma associated with hypercalcemia is always suggestive of renal insufficiency.

In seventeen cases of multiple myeloma where the alkaline phosphatase was studied, only four showed a slight elevation. The greatest elevation was 19 King-Armstrong units. In all four cases there were pathological fractures to account for the elevated alkaline phosphatase.

Autopsy Findings

The lesions in the bones are commonly soft greyish-white or reddish tumor nodules. The widespread involvement of the bone marrow is shown by the success of sternal aspiration as a diagnostic procedure. The distribution of the bone lesions that could be recognized grossly at autopsy or seen on roentgenograms is shown in Table II. Many of the involved bones were probably not recognized either at autopsy or on roentgenograms.

Microscopically, the tumor nodules are composed of myeloma cells of varying degrees of dif-

TABLE II.

Bone	Per Cent
Spine	80
Ribs	74
Skull	55
Pelvis	39
Sternum	28
Femora	20
Clavicles	11
Scapulae	10
Humeri	10
Radius	1
Tibia	1
Patella	1

ferentiation and pleomorphism, arranged in broad sheets. The typical myeloma cell is indistinguishable from an immature plasma cell. Occasional transitions from immature myeloma cells to typical mature plasma cells may be seen. The myeloma cells seem to arise directly from the reticulum. At times in viewing histologic sections and especially in material aspirated from bone marrows, it may be very difficult to distinguish myeloma from an inflammatory plasmacytosis. We have found that observing the degree of immaturity of the cells, the presence or absence of large compact groups of cells, the presence or absence of a marked macrophagic reaction, and the presence or absence of plasma cells arranged around capillaries or endothelial cells, is of help in distinguishing myeloma from an inflammatory plasmacytosis. Inflammatory plasma cells show a tendency to be arranged around capillaries and are usually associated with a marked increase in macrophages[10] (Fig. 1).

The study of histologic sections alone has led to a confusion of terminology. Such terms as myeloblastic, megakaryocytic, myelocytic, lymphocytic, erythroblastic, et cetera, myelomas are to be found in the literature. We are in agreement with those who do not believe that these varieties exist. All of the cases in our series could be classified under a plasma cell type, although considerable variation in cell size and maturity is often seen in the plasma-cell series.

Extraosseous Involvement

Of twenty-eight livers available for study, ten were involved by the myelomatous process. The cells could be seen to be proliferating either within the portal areas or the sinusoids or both, and resembled a leukemic involvement (Fig. 2). Most of the livers were normal in size, although one weighed 2,650 grams. Of twenty-three spleens examined, nine showed involvement by the myelomatous process. These spleens showed a proliferation of plasma cells within the sinusoids of the red pulp, with crowding out and atrophy of the white pulp in some cases (Fig. 3). Lowenhaupt[7] has described a similar finding. The spleens were usually not large. One, however, weighed 560

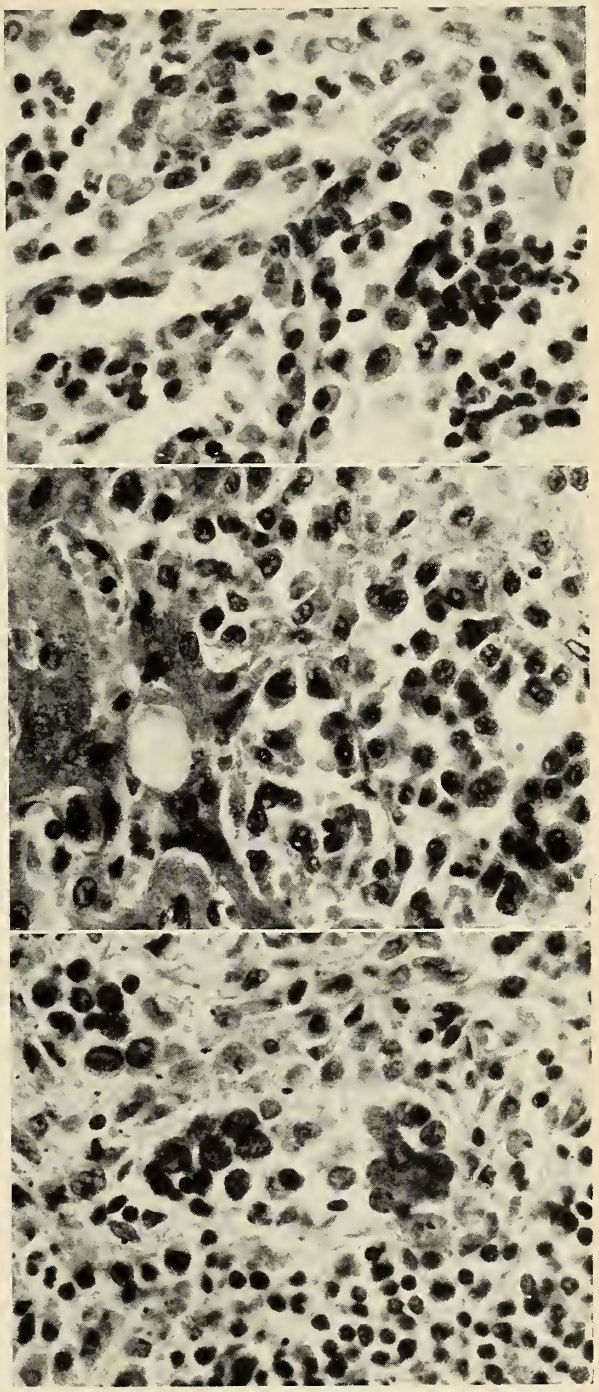


Fig. 1. (*above*) Bone marrow from sternal aspiration shows inflammatory plasmacytosis. Note the plasma cells clustered along the outside of the capillary.

Fig. 2. (*center*) Liver shows marked proliferation of myeloma cells in a portal space with atrophy of surrounding hepatic cells.

Fig. 3. (*below*) Spleen shows proliferation of myeloma cells within the sinusoids.

grams. Two cases were found with lymph node involvement. The plasma-cell proliferation completely replaced the normal lymph node structure. Two cases were found in which there was a marked proliferation of myeloma cells within the kidney parenchyma involving primarily the cortex and resembling that involvement seen in leukemias. One or more than one of the above mentioned organs may be involved in an individual patient.

Renal Disease

Obstruction of the tubules by casts, as described by Bell,[3] was common. In these cases the plasma proteins were high, low, or within normal range. When the plasma proteins were elevated, the increase was usually due to the globulin fraction. Bence-Jones proteinuria may be present but is frequently absent. There was no demonstrable relationship between the Bence-Jones proteinuria, increased serum protein, and presence or absence of tubular casts in this series. Another type of renal involvement which is quite common is calcification of the tubules associated with hypercalcemia.

Amyloidosis

One case was found in which there was amyloidosis of the liver, spleen, bone marrow, and voluntary muscle. This patient's serum globulin was 8.0 grams. Tests for Bence-Jones proteinuria were negative.

Conclusions

It seems reasonable to believe that multiple myeloma is a diffuse neoplastic proliferation of plasma cells from the hematopoietic reticulum. The frequent involvement of the liver and spleen, as well as the bone marrow, makes it more reasonable to believe that it is a disease of the hematopoietic reticulum and not exclusively a bone marrow neoplasm. It does not seem necessary to separate plasma cell leukemia from multiple myeloma. Plasma cell leukemia is simply an exaggeration of phenomena seen frequently in multiple myeloma. Careful examination of the peripheral blood will show an occasional circulating myeloma cell in most cases of multiple myeloma.[8]

Summary

A study of ninety-five proven cases of multiple myeloma with seventy-five autopsies is reported. Males predominated—seventy-one to twenty-four females. The age in seventy-four cases was over fifty years. Bence-Jones proteinuria was found in 42 per cent of fifty-four cases. Plasma proteins were elevated in 64 per cent of fifty cases. Serum calcium was elevated in 60 per cent of thirty-seven cases. Hyperphosphatemia is usually due to renal insufficiency. Alkaline phosphatase is normal except in the presence of pathological fractures. Proliferation of myeloma cells in the liver and spleen was not uncommon. Obstruction of the renal tubules by casts and calcification of the tubules was a frequent finding. The cytology in all of the cases could be classified as myeloma cells belonging to the plasma cell series. Cytological and histological criteria of separating myeloma cells from inflammatory plasma cells are discussed.

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EDUCATION OF THE PATIENT

Education of the patient is a primary function of the tuberculosis institution. One of the greatest obstacles to control of the disease will have been overcome when patients and their families thoroughly understand the facts about tuberculosis and apply what they have learned. Tremendous effort goes into the finding and treating of cases, yet all of this is wasted without the sustained cooperation of the infected individual. As "the person expelling the bacilli," he must learn of his responsibility to prevent spread; he must learn how to participate in his own treatment, for in the best medical opinion much of the success of the cure is up to the patient. His education should continue until an economically competent and self-disciplined individual has returned to his community and himself become an active participant in tuberculosis control.—A. Edith Fenton, R.N. (Public Health Nurse, Mt. Sanatorium, Hamilton, Ontario), Canad. J. Pub. Health, May, 1948.

SARCOIDOSIS

A Clinical and Laboratory Study of Seventeen Cases

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THE PURPOSE of this report is to present certain clinical and laboratory data in a series of seventeen patients seen at the Mayo Clinic, in whom a diagnosis of sarcoidosis (Besnier-Boeck-Schaumann disease) was made, and in whom animal inoculation and cultural studies were performed on specimens of tissue. This problem was undertaken, chiefly, to perform thorough bacteriologic studies of tissue removed for biopsy from these patients in order to investigate further the question of the possible relation of tuberculosis to this entity. The literature on this subject will not be discussed nor reference made thereto, inasmuch as Freiman[1] has recently published an exhaustive survey.

Clinical Analysis of Data on Patients

Of the seventeen patients studied, eleven were between the ages of twenty-eight and thirty-seven years at the time of their first admission to the clinic. The youngest patient was fourteen and the oldest fifty-four years of age. Ten of the patients were female; seven were male. Three of them were Negro, and fourteen were white.

The duration of symptoms at the time of the first admission to the clinic ranged from two months to five years. Ages of the patients at the time of the onset of symptoms ranged from fourteen to fifty-three years, with eleven patients showing their first manifestations of the disease between the ages of twenty-three and thirty-six years.

Four of the patients—one white female, one Negro female, and two white males—had a history of tuberculosis in members of their immediate families.

The incidence of clinical evidence of involvement of various organs is shown in Table I. Involvement of the lymph nodes could probably be regarded as occurring in 100 per cent of the patients inasmuch as only a fraction of all the lymph nodes of the body are generally accessible to physical or roentgenologic examination. Some of the patients showed localization of the adenopathy to certain groups (for example, supraclavicular, mediastinal) while in others the involvement was generalized.

TABLE I. CLINICAL EVIDENCE OF ORGAN INVOLVEMENT IN SEVENTEEN PATIENTS

Organ	Patients
Lymph nodes	15
Skin	11
Lungs or hilar lymph nodes or both*	9
Eyes†	5
Bones**	3
Spleen	6
Gastrointestinal tract††	2
Liver	2
Parotid glands	1

*Roentgenologic examination revealed changes in the lungs characteristic of sarcoidosis.
†One additional patient showed unilateral keratic precipitation on ophthalmologic examination, indicative of previous uveitis.
**Roentgenologic examination revealed cystic changes in the small bones of the hands or feet or both characteristic of sarcoidosis.
††In one case there was involvement of the terminal ileum and colon, and in one case there was involvement of the terminal ileum and sigmoid portion of the colon.

The cutaneous lesions varied from a few discrete papules to generally distributed infiltrated plaques.

Ocular involvement consisted of inflammatory changes in the uveal tract which are characteristic of sarcoidosis. One patient had uveitis associated with bilateral parotitis, a symptom-complex described as the Heerfordt syndrome.

The gastrointestinal lesions were manifested clinically in one patient by diarrhea, lower abdominal tenderness and vague intermittent cramps. Roentgenologic examination of the gastrointestinal tract revealed ulcerohyperplastic ileitis and ulcerative enteritis of the colon. The other patient complained of loss of weight, diarrhea and bloody stools. Roentgenologic examination in this patient revealed a localized area of contraction of the sigmoid portion of the colon, due to an intrinsic lesion. In both of these patients, localization of the pathologic lesions was confirmed by exploratory laparotomy.

One patient complained of polyuria and polydypsia which could not be explained on the basis of primary disease of the endocrine glands; therefore, it might be assumed that localization of sarcoid lesions in the hypothalamic region and pitui-

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tary gland in this patient caused secondary changes therein, producing the afore-mentioned manifestations of diabetes insipidus.

In two cases, pronounced hepatomegaly and splenomegaly were predominant findings, while splenomegaly was clinically evident in four other patients as well.

Clinical Laboratory Studies

Hemoglobin determinations or erythrocyte counts or both were normal in all patients. Leukocyte counts were within normal limits in thirteen patients. One showed mild leukocytosis (11,200 per cubic millimeter of blood) and three showed slight leukopenia (3,200, 4,400 and 4,400).

Differential leukocyte counts were recorded in ten patients. Five of the patients had a definite relative monocytosis (9, 17, 14, 9.5 and 14.5 per cent); one of them (with 17 per cent monocytosis) also showed eosinophilia ranging up to 14 per cent.

The erythrocyte sedimentation rate (Westergren) was elevated in eleven of thirteen patients in whom this determination was made. Abnormal readings ranged between 23 and 99 mm. per hour.

Serologic reactions for syphilis were negative in all patients except one. This patient, a Negro woman, aged thirty-seven years, had been discovered to have a positive blood reaction six months prior to her admission to the clinic, and she had been given some antisyphilitic treatment(?) at that time. Her serologic test reports at the clinic included a Kline—3-plus, Kahn—negative, Hinton—positive, and Kolmer—negative.

Determination of total serum proteins was done in fourteen patients. One showed mild hyperproteinemia (8.5 gm. per 100 c.c. of serum) and the others were well within normal limits. A total of sixteen albumin-globulin ratio tests were performed; six of these showed reversal of the normal albumin-globulin quantitative relationship, thus indicating the presence of both relative and absolute hyperglobulinemia.

Ten blood calcium levels were measured, nine of which were normal, the other being slightly elevated (11.2 mg. per 100 c.c. of serum). Of seven blood phosphorus determinations, one showed moderate decrease (2.6 mg. per 100 c.c. of serum), the remainder being within the limits of normal.

Intradermal tuberculin tests were performed on fourteen patients of this group of seventeen. These patients received 0.0001 mg. of purified protein derivative dissolved in 0.1 c.c. of isotonic saline solution intradermally in the forearm. The readings were uniformly negative in all cases. Nine of these patients were further tested with a more concentrated preparation of the same material, 0.005 mg. in the same diluent. Eight of the patients so tested again showed negative results, but the ninth gave a strongly positive reaction and tender axillary lymph nodes developed on the side tested.

Pathologic Studies

A total of nineteen tissue biopsies were performed at the clinic in seventeen patients. In two of the patients, two separate specimens were removed.

Each biopsy specimen was divided in half at the time of excision. One part was used for pathologic study, while the other part was immediately placed in a sterile container and sent to the laboratory of experimental pathology for study.

Of the nineteen biopsy specimens, eleven were cutaneous lesions, seven were lymph nodes, and one was a section of large bowel wall. The histopathologic diagnosis was sarcoidosis in all cases.

Bacteriologic Studies

These studies included some or all of the following procedures on each tissue specimen: (1) culture on Herrold's pea extract medium, Herrold's glycerinated medium, and Sesano and Medlar's medium; (2) inoculation of guinea pigs, chicks and rabbits with suspensions of the tissue.

More specifically, sixteen specimens were planted on the pea extract medium, thirteen on the glycerinated medium, and five on the Sesano-Medlar medium.

In sixteen cases, each tissue specimen was inoculated into at least two guinea pigs. In one case, two chicks also were inoculated with each specimen of material, and in five cases each specimen of tissue was inoculated into two rabbits in addition to guinea pigs.

The cultures and animal inoculations of tissue specimens from all the patients in this series showed no evidence of the presence of Mycobacterium tuberculosis.

(Continued on Page 1030)

MODERN CONCEPTS OF TREATMENT IN DISORDERS OF THE LACRIMAL APPARATUS

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WHEN ONE has practiced a specialty in medicine for more than twenty-five years, he is certain to have witnessed many changes in the interpretation of diseases in his particular field, for the practice of medicine is an ever-changing and never exact science.

In the author's personal experience in the small field of lacrimal disease, several noteworthy changes in treatment have been observed and it seems worth while to record some of them.

In congenital stenosis where it was formerly advised either to utilize no treatment at all or to pass giant Ziegler probes after slitting the upper punctum, the modern concept is to pass tiny, 0 or 00, Bowman probes, in the first few weeks or months, with the result that one or two treatments cures a condition which by delay may result in acute dacryocystitis with all its complications, including osteomyelitis of the maxilla, which the author has personally witnessed.

Epiphora used to be managed by slitting the canaliculus even though a real constriction of the lacrimal duct could be demonstrated, with the result that tearing always persisted even though the real pathologic condition in the duct was corrected. Lacrimation due to hypersecretion is now attacked at its source, either by x-ray therapy directed at the gland to diminish its output, or by cocainization or alcohol injection of the sphenopalatine ganglion to obstruct the nerve supply to the gland, as the tears are frequently increased by irritating lesions in the nose. Epiphora due to senile ectropion requires correction by one of the accepted treatments of lid shortening, but when it is due only to outward displacement of the lower punctum, a few well-placed Zeigler cautery punctures will yield a most satisfactory result.

Hyposecretion as evidenced by keratitis sicca is well managed by closure of the puncta with the actual cautery, whereupon the mucous glands of Krause furnish enough lubrication to keep the cornea moist and comfortable. It is well to seal off only the lower punctum at first as lacrimation may be sufficient to cause tears to stand constantly in the eyes if too enthusiastic treatment is employed. The upper punctum can always be closed at a later date if necessary.

As a resident on a fine ophthalmic service, the author was taught no surgical procedure on the lacrimal sac other than excision, which of course never cured chronic dacryocystitis as the canaliculi still remained to act as potential sources of infection for the debilitated cornea. Dacryorhinostomy of one form or other has been the greatest advance in this field in the past twenty-five years, and there exists no longer any excuse for any other procedure, provided the passageway from the punctum to the sac is intact. The evidence of any mucocele, no matter how small, in the lacrimal sac is an indication for such therapy, and one should not hesitate even though only one, and that an upper, canaliculus is intact.

Because of its good results in his hands, the author prefers the Dupuy-Dutemps dacryorhinostomy as modified by Chandler, which provides a three-sided tunnel of mucous membrane less apt to be occluded by bony ingrowth as is the case in the original technique. All ethmoidal cells which happen to be in the way should be completely exenterated and care taken not to close the mucous membrane of the lacrimal sac with that lining an ethmoidal cell, as the author once discovered when re-operating on a patient for a colleague whose first plastic procedure was a failure. A large bony window is desirable, at least 10 by 12 mm. or preferably more, as it facilitates the handling of the flaps. Special atraumatic sutures and a small mosquito hemostat as a needle holder are refinements which have been found valuable and time saving. This operation is feasible at any age, as the author has employed it from eighteen months to seventy-two years with complete satisfaction to all.

The history of lacrimal sac surgery was reviewed by illustrations and salient points of each procedure explained. A number of allied affections of the lacrimal apparatus and complications in their treatment were demonstrated by kodachrome slides.

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TREATMENT OF CARPAL NAVICULAR INJURIES

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FRACTURE of the carpal navicular bone is the most common of carpal injuries and is second only to Colles' fractures in injuries about the wrist. As such, it has occupied an increasingly important role in current medical literature. Surgeons writing on the treatment of this fracture repeatedly stress the importance of early diagnosis and early treatment, as healing varies directly with the time interval betwen injury and onset of treatment. Most fractures are readily diagnosed, but no fracture is overlooked more frequently than fracture of a carpal navicular bone. Every so-called "sprained wrist" should be considered a fracture until proven otherwise.

Fracture of the navicular bone occurs most frequently in young, robust, male adults from a fall on the outstretched hand. There is slight swelling of the wrist, with fullness in the anatomical snuff-box area. Motions of the wrist are slightly limited and painful. There is acute tenderness on palpation over the navicular bone dorsally and just below the radial styloid process. X-rays of the wrist must be taken in three planes, the anterior-posterior, lateral, and oblique. In the anterior-posterior view the hand is held in ulnar deviation. An initial negative x-ray report does not necessarily rule out a fracture of the navicular bone. The injury should be treated as a possible fracture by immediate immobilization and x-rays of the wrist should be taken again in one to three weeks. Immediate and proper treatment results in union in almost all cases, whereas delayed treatment results in delayed healing or non-union.

Fractures of the navicular bone occur either through the tubercle, the waist, or proximal pole. The mechanism producing the fracture is thought to be a transmission of force from the heel of the hand through the capitate bone, which impinges the navicular bone against the distal radial styloid process. Anatomically the navicular bone is thinnest at its midportion, the waist, and therefore, is most readily fractured in this area. The bone occupies a unique anatomical position. It is the longest carpal bone, articulating with five other bones, and lies in both the first and second carpal rows. The latter fact is important, for lateral carpal movement which normally takes place between the first and second row of carpal bones is, in the case of a fracture, directed through the fracture line as a shearing force. The articular surface of the navicular bone encases the bone almost entirely in articular cartilage, leaving only a small non-articular dorsal radial ridge for entrance of its blood supply through multiple foramina.[2] These foramina vary in number and position and are rarely seen extending proximal to the midportion of the bone. In fracture through the waist each fragment will receive a blood supply in the larger percentage of cases. In others, the proximal fragment may be devoid of a blood supply, and in fractures occurring through the proximal end of the navicular bone the small proximal fragment is avascular. Because healing of the fracture is dependent on its blood supply, certain predictions can be made regarding healing: fractures of the tubercle, having a good blood supply, usually heal rapidly; fractures through the waist heal in most cases if rigidly immobilized for a period of eight to ten weeks; but fractures through the proximal pole require a longer period of immobilization, even up to eight to twelve months. This time is required for re-establishing blood supply by creeping substitution, just as in other cancellous bone fractures.

Treatment of a fractured navicular bone is by continuous and uninterrupted immobilization in a snug-fitting cast. It has been repeatedly shown that union will occur if immobilization is complete and prolonged. Soto-Hall and Haldeman[4] have placed emphasis on position of the wrist and thumb in plaster. They advise a position of full radial flexion and 30° dorsal flexion of the hand, with full abduction and extension of the thumb. This position undoubtedly aids in securing better fixation, as the navicular fragments are locked together and the disturbing motion of a gliding flexor pollicis longus tendon is eliminated. Immobilization, however, is the most important factor in successful treatment. The snug-fitting cast should extend from the distal palmar crease to just below the elbow and should include the thumb. It should be changed only when it becomes loose. Immobilization is continued until x-ray evidence of union is present.

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When non-union of a fracture has occurred, the treatment of choice is bone-graft surgery. Schneck[3] has advised drilling of the navicular bone, first subcutaneously and then openly. This, however, has given way to bone grafting, as it has proved more successful in promoting healing. The technique of operation varies. Some surgeons use two or three small grafts; others use a single graft, of varying size, taken either from the radius, ulna, or tibia. Drilling of the navicular bone is not a simple task, and great care must be exercised in placing the drill hole properly so that adjacent articular surfaces are not injured. Bone grafting is difficult, even in experienced hands.

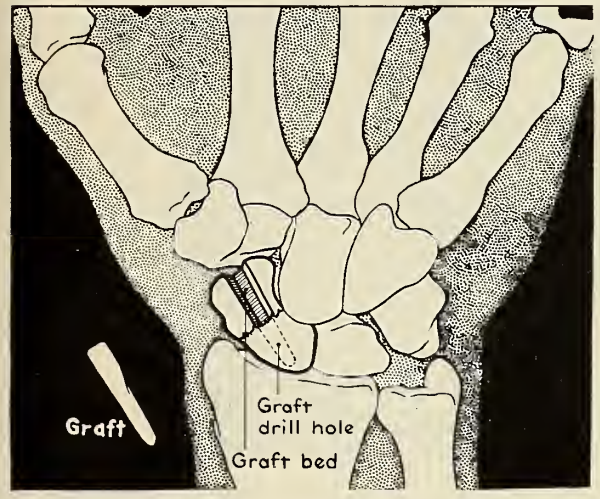


Fig. 1. Drawing of the operative procedure. The graft bed in the proximal navicular fragment is well visualized.

In our surgical procedure a channel is cut with a chisel in the proximal fragment, and the distal fragment is drilled under direct vision. This technique aids greatly in the accurate placement of the graft in the distal fragment. A fairly large graft (shown in the lower left corner of Figure 1) is then introduced into the channel and wedged securely into the distal fragment, impacting the fragments with the bone graft. Following operation, immobilization, as outlined earlier, is carried out until union is demonstrated on x-ray examination.

Case Reports

Case 1.—This illustrates treatment of a fresh fracture by prompt and continued immobilization. This thirty-six-year-old man suffered a fall on his outstretched hand on January 23, 1946, while visiting in another city. He had immediate pain, swelling, and disability in the wrist. He was seen by an orthopedic surgeon who took x-rays and then immobilized the wrist, even though the x-rays were negative for fracture. This patient was instructed to report to his own doctor on return home for re-examination and further x-rays.

He was seen and examined on January 29, 1946. X-rays taken at this time, six days after injury, showed a fracture through the waist of the navicular bone (Fig. 2). Examination revealed acute tenderness over the navicular bone dorsally, as well as in the anatomical snuff-box area, with limited motion. The wrist was immobilized in a plaster cast, incorporating the thumb for ten weeks. Figure 2 also shows the healed fracture on May 14, 1946, some fifteen weeks after starting treatment. Good bony union had been obtained, but there was still some bony atrophy present. He had a good result, having a complete range of painless motion.

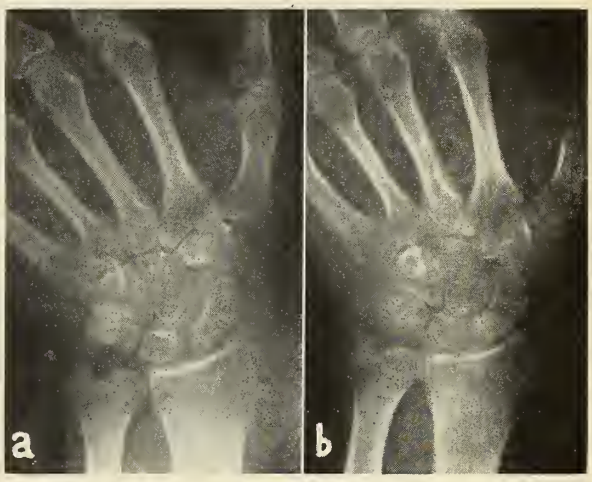


Fig. 2. *Case 1.* An acute fracture of the waist of the navicular bone (*a*) six days after injury, and (*b*) fifteen weeks later, following conservative treatment in plaster.

Case 2.—This illustrates treatment of a fracture with delayed union by bone-graft surgery. This young woman, aged twenty-four, fell on her outstretched hand in the winter of 1941, sustaining an injury to her wrist. She experienced some swelling, pain and disability in the wrist, but thought this was only a sprain and sought no medical help. Her symptoms gradually subsided, and she was able to carry on with her work. In the fall of 1941, her symptoms recurred. Examination at this time revealed tenderness over the navicular bone with pain on radial-abduction of the wrist. X-rays taken on October 6, 1941, showed a fracture of the waist of the navicular bone with widening of the fracture line through absorption with early cystic changes (Fig. 3a). She was treated by bone-graft surgery on October 31, 1941. The navicular bone was exposed through a lateral incision, drilled and grafted with a tibial graft. Figure 3b shows the graft well in place. The graft, however, is slightly small. Gordon Murray[1] states that larger grafts promote healing more readily. Following operation, immobilization was carried out in plaster for four months. X-rays taken in June, 1942, eight months following operation, show excellent bony union (Fig. 3c). Clinically, the patient had a normal functioning wrist.

Case 3.—This illustrates treatment of a fractured navicular bone with established non-union by bone-graft surgery. This eighteen-year-old boy gave a history of having injured his wrist playing football three years previously. He complained of immediate pain at the time of injury in his wrist and saw his doctor. The wrist was not x-rayed, and the injury was treated as a sprain. One year later, because of persisting disability, this patient sought the help of another doctor, who x-rayed his wrist and immobilized it in a leather brace for a period of five months. Some improvement followed, but his symptoms recurred. He was seen in September, 1946, when he complained of limited, painful, motion in the wrist and stated that cold weather aggravated his symptoms. Examination revealed marked tenderness over the navicular bone, especially in the anatomical snuff-box area. Pain was increased by radial and dorsal flexion of the wrist. X-rays taken September 26, 1945, show a definite fracture through the waist of the navicular bone, with marked widening of the fracture line, with associated cystic changes in both fragments (Fig. 4a). A bone-graft operation was performed on October 9, 1945. At operation, the fracture line was curetted of its fibrous tissue, the distal fragment slotted, and the proximal fragment drilled under direct vision. A tibial graft was introduced into the slot and wedged securely into the distal fragment. This graft, as shown in Figure 4b, was large and in excellent position within the navicular bone. Plaster immobilization was enforced for approximately three months and then fixation continued in a leather brace for an additional three months. X-rays taken on February 17, 1947, sixteen months postoperatively, showed good bony union present (Fig. 4c). The patient

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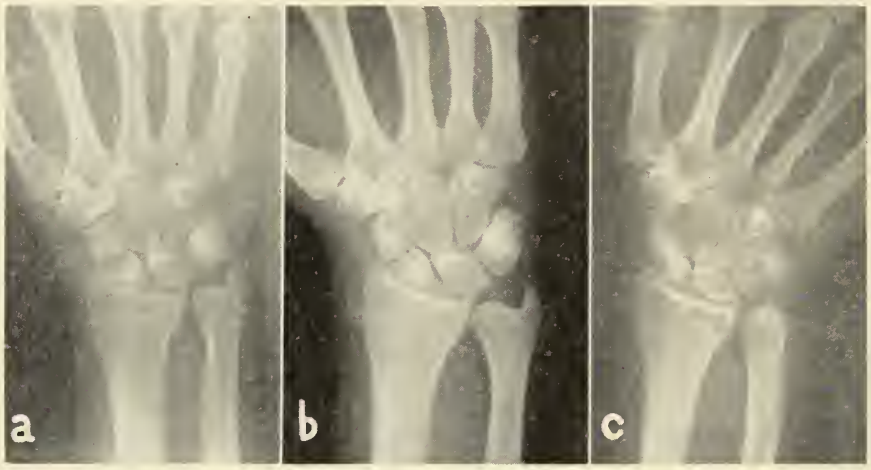


Fig. 3. *Case 2.* (a) Delayed union in a fractured carpal navicular bone. (b) Bone graft well aligned in navicular bone. (c) Bony union is shown eight months later.

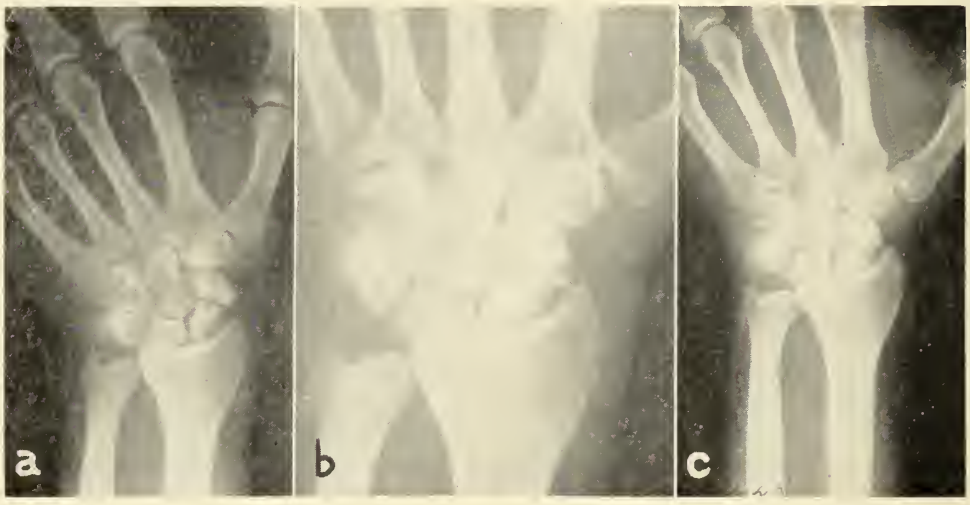


Fig. 4. *Case 3.* (a) Marked widening of the fracture line with cystic changes seen in a case of definite non-union of a fractured navicular bone. (b) A large bone graft in good position within the navicular bone. (c) Bony union is shown sixteen months following bone-graft operation.

THE SURGICAL MANAGEMENT OF INTESTINAL OBSTRUCTION

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DURING THE past decade the concept of the mechanistic factors in obstruction and their treatment as described by Wangensteen have become generally accepted. It has only been during this period that the mortality rate has shown any consistent decline.

This improvement in the mortality of intestinal obstruction is undoubtedly due to a better understanding of the mechanics of obstruction and its relief by gastrointestinal suction; to a better knowledge of the value of electrolytes, blood and plasma transfusions; to a keener awareness on the part of the physician of the importance of early recognition and the institution of prompt medical and surgical treatment; and finally to the exhibition of improved judgment and operative finesse in correcting the obstructive factor and performing aseptic decompressions and anastomoses.

Obstructions of the intestinal tract may be due to mechanical factors or they may be of functional origin. Obstructions of the latter type occur most commonly after operations, after spine injuries and in association with intra-abdominal inflammatory lesions. The treatment of this type of obstruction is largely medical. The most important therapeutic procedures are gastrointestinal suction and intravenous infusions.

Table I shows the relative frequency of occurrence of lesions producing obstruction in a series of 244 cases at St. Mary's Hospital, Duluth, in the decade 1937 to 1948. Adhesions and bands, hernias, tumors and intussusception in that order comprise almost 85 per cent of the factors producing obstruction. The remaining 15 per cent includes such lesions as volvulus, foreign bodies (such as gallstones), diverticulitis, regional ileitis, Meckel's diverticulum, stricture and almost an equal number in which the type of obstruction was not specified.

Obstructions by bands and adhesions, either occurring early after operation, late after operation or without previous operation, are the most frequent cause of intestinal obstruction. In this group of cases, 88 per cent had previous operations. Forty-five per cent had a previous appendectomy, and 25 per cent, a pelvic operation.

TABLE I. CAUSE OF OBSTRUCTION

Adhesions and Bands	80
Strangulated	15
Simple	65
Hernias	53
Strangulated	42
Incarcerated	11
Tumors	45
Large Bowel	39
Small Bowel	5
Metastatic	1
Intussusception	24
Type not specified	20
Mixed types	22
Volvulus	9
Small Bowel	3
Gallstones	4
Diverticulitis	3
Regional Ileitis	2
Meckel's diverticulum	1
Food Bolus	1
Stricture, large bowel	1
Hirschsprung's disease	1
Total	244

TABLE II. AGES

	Males	Females	Average Age in Years
Adhesions and bands	41	39	46
Hernias	21	32	58
Tumors	17	28	62.5
Intussusception	17	7	1.3
Type not specified	9	11	51.5
Mixed types	16	6	51.1
Totals	121	123	45*

*Excluding intussusception 53

The most frequent cause of obstructions of the large bowel are neoplasms.

The most frequent cause of obstruction in children is intussusception.

In almost one-third of the cases there was evidence of recurring attacks of obstruction.

Males and females are equally susceptible to acute intestinal obstruction (Table II).

Obstructions by neoplasms affected chiefly the older age groups, the average age being 62.5 years. Obstructions due to bands and adhesions affected the younger adult age group, while the average age of the intussusception group was 1.3 years.

Treatment was limited to medical management in about 25 per cent of the 244 cases. This group of patients included those of minor degrees of obstruction which were relieved by gastrointestinal suction. There were five cases of intussuscep-

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TABLE III. TREATMENT

	Number	Per Cent	Deaths	Per Cent
Medical	63	26	11	17.4
Surgical	181	74	30	16.5
Total	244		41	

TABLE IV. MORTALITY

	Oper. Within 24 hrs.	Oper. Within 48 hrs.	Oper. After 48 hrs.	Totals
Adhesions and bands	17	13	30	60
Hernias	24	13	12	49
Intussusception	12	2	5	19
Tumors	0	0	37	37
Type not specified	0	0	2	2
Mixed types	3	1	10	14
Totals	56	29	96	181
Deaths	4	5	21	30
Per cent	7.1%	17.1%	21.8%	16.8%

tion which were reduced by barium enema. The group also included several whom it was impossible to get into condition for operation and also included a few who entered the hospital in extremis (Table III). Interestingly, the mortality rate for this group was slightly higher than that for the group which was subjected to operation.

The chief factor in the high mortality rate of intestinal obstruction is delay: delay in seeking medical attention and delay on the part of the physician in making a diagnosis and instituting treatment. Those who died on the medical service without benefit of surgery had been ill an average of over eight days before medical treatment was instituted. On the surgical service, of those who succumbed, the average patient had been ill for 13.6 days before operation was performed.

The influence of length of illness before operation on the mortality rate is illustrated in Table IV. Of fifty-six patients who were operated upon within twenty-four hours of the onset of illness there were four deaths, or a mortality rate of 7.1 per cent, whereas within forty-eight or after forty-eight hours the mortality rate rapidly increased to 17.1 per cent and 21.8 per cent, respectively.

It is obvious that a continuing improvement in the mortality of intestinal obstruction demands early accurate diagnosis and the prompt institution of treatment. All too frequently when a patient with acute obstruction is admitted to the hospital, the doctor is satisfied with an admitting diagnosis of "acute abdomen" or at best one of "acute obstruction," no great attempt being made to diagnose the type or level of obstruction or whether it is a simple or strangulating obstruction.

Occasionally acute appendicitis, biliary tract disease, pancreatitis, perforated ulcer and acute ureteral obstruction may simulate acute intestinal obstruction.

The triad of symptoms characteristic of obstruction are colicky pain, vomiting and distention. The character and intensity of these symptoms will depend largely on the degree and level of the obstruction. High small bowel obstruction is characterized chiefly by profuse vomiting and, if the level of obstruction is below the duodenum, colicky upper abdominal pain. Low small bowel obstruction is characterized by the sudden onset of colicky abdominal pain and borborygmi heard at the height of the colic. One should keep in mind that in the early hours of obstruction distention is not present. Yellow-brown, sometimes foul-smelling, vomitus signifies low late ileal obstruction.

With colonic obstruction there is a more gradual onset of colicky pain. Abdominal distention becomes marked only with complete obstruction. Vomiting is not a striking feature. Because of the competency of the ileocecal valve (75 per cent), acute obstructions of the colon are largely of the closed loop type.

One of the stumbling blocks is the early differentiation between simple and strangulation obstruction. This is important because the latter group is associated with a much higher mortality. Because of the inability to distinguish strangulation from simple obstruction, some surgeons take the stand that all acute mechanical obstructions should be regarded as strangulating until proved otherwise. The surgical staff of the Massachusetts General Hospital follows the policy of immediate operation, after replenishing fluids, upon all patients with acute intestinal obstruction who are seen within twenty-four hours. Even those that are seen within forty-eight hours after the beginning of the illness are operated upon as soon as the electrolytes, plasma and blood are replenished.

In this connection, Moses makes a strong point in his insistence that the distention should be relieved and that the physiological alterations should be corrected before the patient is subjected to operation.

External hernias are the most frequent cause of strangulation obstruction and as such should offer no difficulty in diagnosis (Table V). As evidence of this is the relatively low mortality rate associated with external hernias. An exception to

this is femoral hernia where the mortality rate was 40 per cent.

The characteristic clinical picture is a patient with a tender tense mass at the site of herniation associated with signs and symptoms of intestinal obstruction.

It is the lesion within the abdomen producing obstruction that is associated with difficulties in recognition, differential diagnosis, and consequent delay in treatment. In this type of case it is important not only to establish a diagnosis but to estimate the degree, type and level of obstruction. In strangulation obstruction the colicky pain is more sudden in appearance, more intense and continuous. The patient tries to assume a position of relief. There is a more rapid progression of symptoms. The abdomen becomes tender. Shock may supervene early. A tender mass on abdominal or pelvic examination may be detected. A diagnostic paracentesis of the abdomen can be of great value. An 18-gauge needle is inserted through the abdominal wall in an upward oblique direction to either side and slightly below the navel. The aspiration of a few cubic centimeters of bloody fluid will clinch the diagnosis.

The x-ray evidence of obstruction is most important. Only too often the physician fails to utilize this diagnostic aid (Table VI). A large scout film of the abdomen is most helpful. Other exposures which may be of aid can be taken in the erect and in the lateral positions. The particular information which an x-ray examination may elicit is the degree of intestinal distention, the location of distended loops and whether air exists in the peritoneal cavity and colon.

In the event that the diagnosis is not immediately evident and a policy of watchful waiting is adopted, it is well to see and examine the patient at intervals of a few hours. The abdomen should be carefully re-examined, the general condition of the patient should be appraised, and it may be desirable to repeat the x-ray pictures. During this interval, of course, the preoperative treatment of the patient can and should be initiated.

Preoperative Treatment

It is safe to say that gastrointestinal suction should be started immediately in all cases of obstruction of the small bowel. The type of tube to be used is a Levine lead-tipped duodenal tube or the Miller-Abbott, or one of its modifications. The Levine tube will take care of all high intestinal obstructions as well as most of the cases of low small bowel obstruction where its use is resorted to before the obstruction becomes marked.

In the low ileal obstructions, the Miller-Abbott tube or one of its modifications should be resorted to especially in the case of marked distention. Various methods and contrivances have been suggested to insure the rapid passage of the tube through the pylorus and down the intestine. Its use is not without some danger.

Gastrointestinal suction is not indicated in large bowel obstruction unless there is an incompetent ileocecal valve with regurgitation and consequent distention of the lower ileum.

Granted that the case is one of intestinal obstruction, supportive treatment should be started at once. Morphine or one of its derivatives should be administered for relief of pain. In acute high intestinal obstruction, saline infusions should be administered. In low obstructions saline solutions have no specific merit. Where dehydration is present, as indicated by thirst, dryness of the skin, loss of turgor, and low urinary output, saline and glucose solutions should be administered in sufficient quantities to insure a urinary output of 700 to 1,000 c.c. daily. In low bowel obstruction and with great distention, the too liberal use of saline may result in greater accumulations of fluid in the obstructed gut; overchlorination may result in salt retention and edema.

If shock is impending or present, such as one sees in strangulation or in late simple obstruction, plasma and blood transfusions should be administered in adequate amounts.

TABLE V. MORTALITY IN VARIOUS GROUPS

	Total Cases	Surg. Trt.	Mortality
Adhesions and bands	60	7	11.6%
Hernias			
Inguinal, Ventral	34	1	3 %
Internal	5		
Femoral	10	4	40 %
Intussusception	19	2	10.5%
Tumors	37	11	30 %
Type not specified	2	1	50 %
Mixed types	14	4	30 %
Totals	181 oper.	30 deaths	

TABLE VI. X-RAY EXAMINATIONS

	Positive	Negative	None Taken
Adhesions and bands	49	10	21
Hernias	5	0	48
Tumors	29	3	13
Intussusception	8	0	13
Mixed types	12	3	7
Type not specified	16	2	2
Total	114	23	107

The two most important measures in the preoperative treatment of a patient with intestinal obstruction are the administration of adequate fluids (electrolytes, plasma and blood) and gastrointestinal suction. These should be started early and should be continued throughout the operation and into the postoperative period until normal motility has been established.

Operative Treatment

The three cardinal principles in the successful treatment of intestinal obstruction are the institution of gastrointestinal suction, the administration of fluids in the proper amounts, and an operative procedure performed at an opportune time and wisely selected and executed in a skillful manner.

The choice of anesthesia is important. Spinal anesthesia is ideal in the good-risk patient but should not be used in the face of shock, in the patient who is very anemic or in the patient of advanced years. General anesthesia, skillfully administered, is preferred for these patients.

Local infiltration in the poor-risk patient where a minor procedure is contemplated is sometimes indicated.

The incision will depend largely on the level of obstruction. For exploration a midline lower abdominal or mid right rectus incision should be made. In the case of low obstruction of the small bowel, an incision on either side of the midline is preferred. If a mass can be palpated, a vertical incision over the mass is advantageous. In the case of obstruction of the pelvic colon, an incision parallel to and over the transverse colon is preferred. In the case of an obstruction of the right colon, a vertical incision on the left side of the abdomen is often indicated.

When the abdomen is opened, its contents should be inspected insofar as possible. Evisceration is to be avoided. Patients with prolonged acute bowel obstruction do not tolerate extensive manipulation. The ideal is to find the obstructing element directly, carefully divide the band or release the bowel. As a general rule, the early obstruction is corrected more easily and with less danger to the patient. The operative correction of obstruction in the late stages is more apt to be associated with more serious consequences to the patient and will require better surgical judgment and more complicated surgical maneuvers.

The operative treatment of acute intestinal obstruction depends on the nature of the obstruction and the pathological changes in the bowel wall. In the case of strangulation the question of the viability of the bowel must be judged. If the bowel is viable, the strangulation only is relieved. If the gut is nonviable, it must be excised. After release of the obstruction, time should be allowed for the circulation of the obstructed segment to return. To encourage this, the bowel should be covered with hot moist sponges. Whether the bowel is viable will be determined by its color, contractility and the pulsation of its vessels. If damage to the circulation is slight, consideration should be given to the performance of an enterostomy proximal to the strangulated area. In the event that a Miller-Abbott tube is already decompressing the small bowel, enterostomy will not be indicated. In the case where the bowel is nonviable, primary resection with aseptic end-to-end anastomosis is the procedure of choice. The danger is peritonitis. If there is a question about the anastomosis and the bowel is not adequately decompressed, an enterostomy proximal to the anastomosis is indicated, especially in low ileal obstructions.

Gastrointestinal suction has largely done away with the need of enterostomy; yet, at times there will be a clear indication for its employment.

With the development of aseptic anastomoses, exteriorizations are being abandoned. However, exteriorization operations sometimes will be indicated in low ileal and colonic obstructive lesions.

Entero-enterostomy will sometimes be indicated in the case of massive adhesions and an occasional case of inflammatory obstruction, as in regional and multiple jejunitis and in some cases of acute obstruction due to tumor.

In acute obstruction of the right half of the colon where there is an incompetent ileocecal valve, ileotransverse colostomy will be the operative procedure most commonly employed. Colostomy, and less frequently cecostomy, will sometimes be indicated. In cases of volvulus of the cecum and of the ascending colon where gangrene is impending, primary resection or exteriorization is usually performed. In lesions of the left half of the colon, transverse colostomy will be indicated. In volvulus of the sigmoid, if it is not too far advanced, untwisting of the volvulus and decompression of the segment by the use of a rectal tube is useful. When gangrene is present, exteriorization is advised.

The surgical maneuvers to correct rarer types

of obstruction will depend on the place and the type of the obstructing factor in the particular case.

Postoperative Treatment

Postoperative treatment begins when the patient is still in the operating room. The most common complications are shock, atelectasis and aspiration pneumonia, peritonitis, wound infection, and thrombophlebitis.

In a patient who is operated upon early and after adequate preparation, postoperative complications occur infrequently. Conversely, in the group that is operated upon late and without sufficient preparation, complications that may be lethal can be frequently expected.

Postoperative management is largely a continuation of preoperative treatment. Gastroduodenal suction should be started when the patient enters the hospital, continued through the operation and into the postoperative period until normal motility is re-established.

Intravenous fluids also should be started in the preoperative period, especially if there has been excessive vomiting with electrolyte depletion and dehydration, or in the case of impending shock. This fluid administration should be continued throughout the operation and into the postoperative period until recovery is well advanced.

Before the anesthesia is discontinued, the pharynx and the trachea should be thoroughly aspirated.

The patient should not be hurried from the operating room. Impending or actual shock should be combatted with sufficient intravenous fluids (blood or plasma). The pulse and the blood pressure should be stabilized. In some cases it may be desirable to transport the patient back to his room in a tilted (head down) position and, when transferred to his bed, kept in this position by elevating the foot of the bed. He is then maintained in that position until fully awake or until the blood pressure is stabilized.

Oxygen admisistered by the Boothby mask may be indicated, especially if cyanosis is present.

Penicillin administration, if not begun during the preoperative period, can be started by intramuscular injection in adequate doses.

Catheterization every six to eight hours may be necessary if the patient is unable to void. Fluids should be administered in sufficient quantities to insure an excretion of 800 to 1,000 c.c. of urine daily.

TABLE VII. SURGICAL MORTALITY, SMALL BOWEL OBSTRUCTION

	Total Cases	Deaths
Adhesions and bands	60	7
Hernias	49	
Inguinal		1
Femoral		4
Intussusception	19	2
Tumors	4	3
Mixed	13	
Volvulus		1
Regional ileitis		1
Gallstone		1
Type not specified	1	0
Total	146	20 (13.7%)

Early ambulation should be encouraged.

Enemas should not be given until all danger of peritonitis is passed. Usually the bowels will move spontaneously some time after the fourth postoperative day.

Atelectasis of a minor degree will usually clear up spontaneously if the patient is encouraged to change his position frequently and if he is encouraged to cough and expectorate. Collapse of a major lobe or of an entire lung will require bronchial aspiration. The danger of aspiration pneumonia will largely be eliminated by thorough gastrointestinal suction.

The treatment of peritonitis is largely by gastrointestinal suction.

Wound infection will become evident by fever and local tenderness, swelling and inflammation.

Thrombophlebitis will be largely combatted by elevation of the foot of the bed in the early postoperative period, and, later, by early ambulation. When phlebothrombosis or thrombophlebitis is present, consideration should be given to heparin and dicumarol administration and, in some cases, to bilateral ligation of the deep femoral veins.

In the case of other less common complications, appropriate treatment should be instituted early.

Mortality

In this series there was an operative mortality of 16.5 per cent. If one considers lesions of the small bowel only, the mortality rate was 13.7 per cent (Table VII). When strangulation obstruction is present, the mortality rate is substantially increased. The over-all mortality rate in the nonstrangulated group was 14 per cent compared to 25 per cent in the strangulated group.

Table VIII, taken from Moses' article, shows the mortality rates in reported series of acute obstructions of the small bowel.

The chief causes of death are peritonitis, shock, and pulmonary complications. This holds true not

TABLE VIII. MORTALITY RATES IN REPORTED CASES OF ACUTE OBSTRUCTION OF THE SMALL INTESTINE

Year	Author	Number Cases	Mortality Per Cent
1930	Holden		19.0
1938	Scudder, Xwemer & Whipple	2150	24.0
1938	Wangensteen	157	17.9
1940	Schlicke, Bargen & Dixon	133	21.8
1940	McKittrick and Sarris	136	20.0*
1942	Dennis and Brown	48	13.3
1943	Dennis and Brown	110	15.5
1944	Dennis	53	15.1
1945	Moses	118	8.5*
1946	Hunt	41	7.3
1946	Moses	223	6.4*
1949	St. Mary's Hospital, Duluth	146	13.7

*Hospital mortality

TABLE IX. CAUSES OF DEATH

	No Surgery	Surgical	Totals
Peritonitis	14	27	41
Shock	12	5	17
Deaths in Operating Room	0	4	4
Coronary occlusion	2	1	3
Pulmonary embolus	1	1	2
Anuria	1	0	1
Pneumonia	0	3	3
Unknown	0	1	1
Totals	30	42	72

only in the surgical group but also in those who die under medical treatment. Table IX shows the causes of death in a study of the autopsy records of St. Luke's Hospital, Duluth, between the years 1935 to 1948. Peritonitis and shock comprised 73.8 per cent of the surgical deaths and 86.6 per cent of the medical deaths.

Conclusions

Based on the above clinical and pathological studies of intestinal obstruction, the following conclusions can be drawn:

To expect a continuing improvement in the mortality rate, the patient must somehow be induced to seek medical attention earlier in his or her illness.

The physician's responsibility is to make an early, accurate diagnosis and begin treatment without delay. The two most important procedures in treating intestinal obstruction are gastrointestinal suction and the administration of intravenous fluids.

The surgeon's duty is to see that the patient is properly and adequately prepared, and that the operation is performed at a judicious time and in a skillful manner.

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INSURED FOR HEALTH

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IN A LITTLE over 100 years, life insurance has become an important asset in nearly all countries. The exceptions are those countries where, because of such elements as unstable health and unfavorable economic conditions, life insurance is often unavailable, despite the fact that the people of those countries have the greatest need for its benefits. What has been accomplished in public acceptance of life insurance remains to be done in the field of health insurance. Certainly, the reasons for health insurance are as logical and valid as those for family protection after the death of the breadwinner.

A stable economic organization and a relatively high level of general health are essential to both types of insurance. Perhaps one reason that health insurance has not been so widely accepted as it deserves is that the principles of an ordinary life insurance policy are fairly simple and easily understood. The policy holder knows that a payment will be made to his beneficiary on his premature death, and because he is glad to be alive he is willing to pay the premiums as they come due.

Secondly, life insurance policy holders realize that if they pay their premiums until they reach a fairly advanced age, and leave the dividends to the credit of the policy to accumulate at interest, the cash value of the policy, upon which the size and type of all annuity payments depend, will finally equal or even exceed the total of the premiums paid. During the first years, the value of an insurance policy rests upon the certainty that one's family is protected financially in the event of the breadwinner's death or total disability. That certainty is, for the time, of more value than the amount of the premiums paid. For a considerable part of the time that the policy is in force, the death benefits are much greater than the amount of the premiums. It is man's longevity, and the earnings of the moneys invested by insurance companies operating under a stable economic system, that permit life insurance to function satisfactorily.

Thirdly, there is obviously no question about whether or not a person is dead. There is little chance of evasion on the part of the policy holder, and we practically never hear of an insurance company failing to pay death benefits.

The reasons for maintaining health insurance are just as logical as those in favor of life insurance. A person who maintains his health and earning power should be glad to pay premiums without getting any return from them, so long as health and earning power continue. His power to earn money is a much greater financial advantage than his possession of insurance. He should have a great deal of satisfaction in knowing that as long as he does not need medical care and retains his earning power, his premiums are helping individuals and families for whom illness has created a crisis. Similarly, the home owner who pays fire insurance premiums would prefer to make life-long payments rather than suffer one disastrous fire.

The need for educating the general public regarding this point of view was shown recently, when several college students on vacation were heard discussing health insurance and college health services. Usually colleges include a health service fee as part of the total tuition charge. Thus these fees constitute a type of health insurance. The students felt they had been deprived of something because they had not received in medical services the equivalent of what they had paid as a health service fee. They evidently lacked the ability to appreciate the principles of health insurance. A more thorough understanding of these principles would have convinced them that they were the gainers in the transaction, since they remained in good health and did not need the services for which they paid.

There are some people who prefer to budget their own medical and hospital needs, independently of any group. By far the larger number, however, cannot afford to set aside sufficient funds from their income, during the early years of budgeting, to protect themselves and their families against the catastrophe of serious illness or injury. The amount of money necessary to budget possible future medical and hospital costs will be less if the insurance principle is adopted. The

annual payments by individuals represent the *average* health costs for the group. A few subscribers each year have unusually heavy costs, while many make little or no demand upon the joint fund.

Furthermore, health insurance will be much less expensive for everyone if each individual subscriber is willing that slight or minor ailments be excluded from benefit payments. This principle has a precedent in the $50 deductible type of automobile insurance. Health insurance plans are striving to make their settlements fair and equitable, and it would be uneconomical to make payments for slight illnesses, the cost of which can be easily financed by the individual. The cost of such slight illnesses can usually be included in the living costs that the family regularly meets. These costs will rarely exceed those of entertainment or recreation. It is of course important not to neglect slight ailments, which might become major ones if not detected and treated in the early stages. But the cost of medical care for these minor needs can and should be borne, in the majority of cases, by the individual or his family, without recourse to his health insurance.

The success of any insurance plan depends upon everyone playing the game fairly. People who run up unnecessary bills, merely because they have insurance to pay the bills, are defeating the most essential principle of sickness insurance, which is medical care for unusual, unexpected, long-lasting or exceptionally costly illness. Good medical care can be provided satisfactorily in such an event only if everyone "plays fairly." In insurance of any type, the rates go up sharply when those concerned abuse the services provided. The public, innocent and guilty alike, pays for all demands, necessary as well as unreasonable, under the insurance principle.

A very much greater proportion of those insured for health will require insurance aid than those covered by life insurance. Death is a very much smaller hazard than illness. On the other hand, sickness benefits—in the majority of cases—are much smaller than death benefits.

We have stated that the basic principles of health insurance are very similar to the basic principles of life insurance. They are also quite similar to the basic principles of satisfactory living. Education and training in recognizing the significance and value of these basic principles should begin in early childhood and should be carried on through the grades and high school. The child needs to learn that team-work, fair play, and group effort apply to health insurance in the same way that they apply to other joint projects for a common good. Health insurance, covering especially catastrophic or prolonged illness, should be a part of every citizen's economic planning. Possession of such insurance actually bolsters health, because it gives people the feeling that, if sickness comes, financial help is always at hand.

Fifty-five million Americans have already protected themselves in this manner, and this number, fortunately, is increasing every month. All these people have a vital personal interest in the success of voluntary health insurance. They also share the hope that, as experience is gained, the benefits of health insurance may be improved and enhanced. What these fifty-five million have attained should not be destroyed in the interests of a much smaller group that cannot or will not plan for the health protection of themselves and their families. This latter group obviously does not include those now receiving or in need of public assistance because of old age, disability, and other conditions of this general nature.

It is believed by many that if health insurance for individuals and groups were to be made compulsory, the compulsory features would cause the insured groups to lose their initiative and would hamper individuals in developing group co-operation, team-work and fair play as these principles apply to health insurance. A compulsory health insurance system might foster the type of thinking illustrated by the college students who felt that they had not received any benefit from their health service fees.

Certainly there are few misfortunes as severe as a long, disabling illness of the breadwinner of a family. Insurance against such a calamity is becoming recognized as a worthwhile investment. Under the effective operation of the insurance principle, those whom misfortune overtakes will be cared for, and all will be assured of adequate protection.

HEMOPERICARDIUM WITHOUT RUPTURE OF THE HEART FOLLOWING DICUMAROL THERAPY FOR MYOCARDIAL INFARCTION

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THE EFFECTIVENESS of dicumarol in preventing thromboembolic phenomena in patients with acute myocardial infarction has been repeatedly confirmed.[11] The hazard of hemorrhagic manifestations as a result of anticoagulant therapy has prompted careful clinical and experimental studies. Nonfatal hemorrhage has been frequently recorded but serious hemorrhage has been rare.[11] In experimentally produced myocardial infarction in dogs, dicumarol did not increase hemorrhage into the myocardium and healing of the infarction was not delayed.[1,3,7]

That dicumarol might increase the danger of ventricular rupture has been feared[9] but no reports of hemopericardium have appeared where anticoagulant therapy could be considered responsible. The following case is reported as an instance in which excessive hypoprothrombinemia induced by dicumarol may have been an etiological factor in the production of hemopericardium.

Report of Case

The patient, a fifty-eight-year-old Polish-American furrier, was admitted on January 2, 1948, for repair of a right inguinal hernia. The cardiovascular history was negative.

The physical examination was negative except for a right indirect inguinal hernia and mild hypertension (Blood pressure: 178/98 mm. Hg).

The urinalysis, erythrocyte sedimentation rate, hemoglobin concentration, serum bilirubin concentration, prothrombin time, and electrocardiogram were normal. The blood Kahn test was negative. A teleroentgenogram showed slight left ventricular hypertrophy and mild ectasia of the aorta.

Because of fatty food dyscrasia, a cholecystogram was performed on January 5, 1948. One hour after the intramuscular injection of pitressin (1 c.c.) the patient developed retrosternal pain with dyspnea and perspiration. The blood pressure was 106/70 mm. Hg and pulse rate was 52 per minute. The heart sounds were distant. An electrocardiogram showed depression of ST-2 and ST-3, small R waves in CF-2 and CF-4, and high takeoff of the ST segment in CF-2, CF-4 and CF-5. A diagnosis of acute myocardial infarction was made. On January 7 the prothrombin concentration was 55 per cent and dicumarol therapy was begun.

TABLE I. DAILY PROTHROMBIN CONCENTRATION AND DICUMAROL DOSAGE

Date	Prothrombin Time In Seconds		Prothrombin Concentration Per Cent	Dicumarol Mg.
	Control	Patient		
1/ 2/48	13	14.1	78	
1/ 7/48	14	16.6	55	200
1/ 8/48	13	20.9	29	0
1/ 9/48	13	21	29	75
1/10/48	13	21.1	29	150
1/11/48	12.8	38.8	10.9	0
1/12/48	13	26	19	50
1/13/48	13	32	15.8	50
1/14/48	14	34	13.5	0
1/15/48	14	44.1	9	0
1/16/48	14	44.7	8	0
1/17/48	14	30.8	15.8	0
1/18/48	14	22.3	27	0
1/19/48	14	33.4	13.8	0
1/20/48	13	24.5	21	50
1/21/48	13.5	31.7	15	50
1/22/48	14	40.6	10.4	0
1/23/48	14	40	10.5	0
1/24/48	14	34.8	13	0
1/25/48	14	30.1	16.2	50
1/26/48	13	26.3	18.8	50
1/27/48	14	63.3	7	0
1/28/48	14	66.5	6	0
1/29/48	14	132	0.5	0

The blood pressure remained about 96/68 mm. Hg, and the heart sounds continued to be faint. He developed slight fever, mild leukocytosis and an increased erythrocyte sedimentation rate. Serial electrocardiograms showed changes considered diagnostic of an anterior myocardial infarction (low voltage QRS in all limb leads, negative T-1, absent R waves in the precordial leads, and negative T waves in the precordial leads). A teleroentgenogram on January 27, 1948, showed increase in the heart size with bulging along the left border.

The patient proved to be more sensitive to dicumarol than usual. On several occasions the prothrombin concentration dropped to very low levels (Table I), but he exhibited no bleeding tendencies, and no vitamin K was given. Liver function studies were performed because of the sensitivity to small amounts of dicumarol. The bromsulfalein retention after forty-five minutes on January 28 was 19 per cent. A cephalin-cholesterol flocculation test on the same day was 1-plus in twenty-four hours and 2-plus in forty-eight hours.

At 9:00 a.m. on January 29 he was dyspneic and pale. Crepitant râles were heard at the right base and the neck veins were distended. The liver was not palpable and no edema was present. One hour later he became more severely dyspneic, apprehensive and cyanotic. His blood pressure was 40/0 mm. Hg. The pulse was weak and thready. Examination of the chest showed bilateral crepitant and sonorous râles. The heart sounds could not be heard. The symptoms and signs became steadily worse and he died at 1:50 p.m. The prothrombin

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concentration, determined at 9:00 a.m. on the day of death, was reported after the patient died as 0.5 per cent.

The description of the significant portions of postmortem examination was as follows:

The pericardial cavity contained 800 c.c. of dark red blood. Numerous soft, dark red, fibrinous adhesions were present between the visceral and parietal pericardium.

A thin-walled aneurysmal dilatation, which measured 7 cm. in diameter, was located on the anterolateral surface of the left ventricle. The wall of the ventricle in the dilated area was 4 mm. thick. On the endocardial surface of the aneurysmal dilatation was a layer of reddish tan thrombus which measured up to 1 cm. in thickness. The anterior descending branch of the left coronary artery showed yellowish intimal thickening with complete occlusion by a thrombus 2 cm. from its origin. No gross laceration of the myocardium could be found, and "very careful and extensive search failed to reveal any small rupture of the ventricular wall or blood vessels of the heart."

Sections of the aneurysmal dilatation examined microscopically showed changes of a fairly recent infarction with early stages of healing. Microscopically no defect was found in the ventricular wall and no diffuse infiltration of blood could be found.

The liver sinusoids were congested with blood. The central portions of the liver cell cords showed extensive atrophy with vacuolization, loss of normal staining reaction and diffusely scattered polymorphonuclear leukocytes. The changes in the liver indicated passive congestion. Since the liver cell cords could be followed down to the central veins, the process was considered to be recent.

Discussion

The great majority of cases with hemopericardium secondary to acute myocardial infarction are associated with complete rupture of the wall of the heart, but partial rupture may occur. Krumbhaar and Crowell,[5] in a review of 654 cases of spontaneous rupture of the heart, found sixteen instances with partial rupture although "reports of partial ruptures were for the most part discarded." Ten of these sixteen patients had rupture of septa or papillary muscles. Three of the patients showed partial rupture from the epicardial surface that did not reach the ventricular chamber, and all of these had hemopericardium. Parkinson and Bedford,[10] Laignel-Lavastine et al[6] and Comes[4] each reported one case of partial rupture of the myocardium with hemopericardium. Nordmann[8] described a hemorrhagic infarction with a small defect in the epicardium and subsequent hemopericardium. Beresford and Earl[2] recorded two cases in which there was an epicardial laceration and hemopericardium but with an intact endocardium. The same authors state the hemopericardium may occur without visible rupture in hemorrhagic infarction, but they do not substantiate this concept with case reports or references. No instance of hemopericardium following acute myocardial infarction without laceration of the myocardium could be found in the literature unless Nordmann's case represents such an occurrence. In twenty-eight cases of hemopericardium following myocardial infarction, reviewed from the autopsy files of the Department of Pathology, University of Minnesota, macroscopic rupture of the ventricle was evident in each instance.

The case presented in this report of hemopericardium without laceration of the myocardium is evidently unique. The exact source of the hemorrhage is obscure. Hemorrhagic extravasation into the myocardium was not demonstrated. The gradual development of symptoms of cardiac tamponade indicate that bleeding occurred slowly. The defective hemostatic mechanism may have precipitated the bleeding and almost certainly permitted massive hemorrhage to occur. That the prolonged prothrombin time produced by dicumarol was deleterious seems probable.

Summary

1. A case is reported of hemopericardium without rupture of the myocardium, following an acute myocardial infarction.

2. Because this is a unique event and the patient had extreme hypoprothrombinemia, it is suggested that dicumarol was of etiological significance in production of the hemopericardium.

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THYROID ADENOMATA IN CHILDREN

Review of the Literature and Report of a Case in a Nine-year-old Boy

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IT IS generally agreed that adenomata of the thyroid gland in children are quite unusual. The voluminous literature on nontoxic nodular goiter is replete with phrases such as: adenomatous goiter "occurs with increasing frequency with age," "is rarely seen before puberty," "begins at puberty or later," and the like. To arrive at any reasonably precise estimation of this incidence at the present time is well-nigh impossible, however. Geographic influences on the entire goiter problem and on statistical incidence of all types of goiter are well known and need no elaboration. Too, iodine prophylaxis has had a profound but as yet incompletely assayed effect on statistical incidences.[5]

Very extensive surveys of the geographical incidence of simple or so-called endemic goiter in both children and adults were carried on during the 1920's by many investigators. Only a few of these reports made any mention of the incidence of nodular goiter in the younger age groups. Olesen, for instance, in 1929, in a study of endemic goiter in Tennessee, a state at the edge of the "goiter belt," reported the results of examinations of 65,148 white and colored boys and girls in the schools. Among 1,049 children aged ten or under, no adenomatous goiters were found. There were forty-eight cases of adenomatous enlargement in a total of 12,487 children aged fourteen or under. Interestingly, thirty-four of these latter forty-eight adenomatous goiters were in the group of 5,560 white girls aged fourteen or under.

To quote only one of a multitude of European observers working on the problem of the incidence of goiter, Wegelin, reporting 696 routine autopsies during the year 1913-1914 at the Berne Pathological Institute, in a highly endemic goiter region, found 445 (63.9 per cent) to have macroscopically visible nodules. Of these, two were in children aged ten or under. Rice, in similar post-mortem studies of the thyroid glands of patients dying from causes unassociated with the thyroid (in Minnesota, another area of high endemicity), found nodules in the glands in 234 (47.4 per cent) of 493 cases examined. Of these, one was found in a patient aged ten or under, and this was a 2 mm. colloid nodule. He included all nodules visible macroscopically on gross serial section. Rice found nodules in 2 to 3 per cent of autopsies on individuals at puberty, and that the percentage incidence of nodules roughly paralleled the figures for age in the older groups. Jaffe studied 1,000 thyroid glands at autopsy at Cook County Hospital in Chicago. The youngest person presenting a nodose goiter was a white girl aged twelve, then there was a colored boy of fourteen, and a white boy of fifteen. All of these observations were made in endemic regions, before the use of iodine prophylaxis.

Schlesinger et al, in another post-mortem study, in New England, a non-goitrous region, reported that of a total of 1,371 autopsies there were nodules in the thyroid gland in 112 (8.2 per cent). However, they included in their study only those with nodules 1 cm. or larger in diameter, on the grounds that they wished to include only those which might have been palpable clinically. None occurred in fifty-two patients in the age group up to nine years of age, and only one (a female), in the thirty-three patients in the age group ten to nineteen years.

It can thus be seen that clinical experience with nodular enlargement of the thyroid gland in children might well be very limited, even in goitrous regions in the absence of the modifying factor of iodine prophylaxis. Cattell stated in 1933 that in his clinical experience he had seen only three instances of adenomatous goiter in children. Kennedy reported in 1940 that in the period 1917-1939, sixty-two patients with nodular enlargement of the thyroid were seen at the Mayo Clinic in children aged fourteen years or younger. Of the sixty-two patients, forty-eight had adenomas, twelve had carcinoma and two had thyroiditis. Of the forty-eight patients with adenomas, thirty-five were treated medically and thirteen surgically. Of particular interest is the fact that in no instance of thyroid adenoma, whether single or multiple, was there any evidence of overactivity of the gland. The number of patients with a single

adenoma and those with mutiple adenomata were equal. Kennedy felt that the reasons for surgical treatment of these adenomata in children were cosmetic or mechanical, or both. Pemberton and Black, reporting from the same institution about five years later, felt that in addition to cosmetic or mechanical indications for surgery, the possibilty of malignancy was often the most important reason for exploration of a nodular goiter in a child. In their material, of the nodular goiters operated upon, one in three proved to be carcinomatous. In many of these cases, the preoperative diagnosis of carcinoma had been made but in others, as in adults, the presence or absence of malignancy was determined only at the time of operation.

It is not within the scope of this paper to enter into a protracted presentation of the time-honored and extensively debated general issue of surgical indications in adenomatous goiter as regards prophylaxis or treatment of possible malignancy. The recent paper by Crile and Dempsey tends to cast doubt on the indiscriminate removal of all nodular goiters on these grounds. They point out, however, that "all adenomas in children must be regarded with grave suspicion, as must discrete adenomas in adults." Certainly all would agree on the advisability of the removal in the adult on the grounds of the possibility of neoplasm, of a single discrete, firm to hard nodule which showed definite evidence of gradual increase in size in a matter of months. One's degree of suspicion regarding such a nodule in a child should be even higher.

Case Report

The patient was a nine-year-old white male who entered the hospital on August 11, 1948. The family history was negative. Pregnancy, delivery, and the developmental history were all normal. He had had chickenpox, measles, and unilaternal mumps in his third year. Tonsillectomy and adenoidectomy had been performed in 1947, at which time a general examination was done and no abnormality of the neck had been noted.

The patient's mother stated that about nine months previously, she had noticed a small rounded swelling at the base of the neck just to the right of the midline anteriorly. This had slowly but definitely increased in size. There was no evidence or history of hyperthyroidism.

The patient's temperature, pulse and respirations were within normal limits. Blood and urine examinations gave negative results. The basal metabolism rate was +4 per cent. The blood pressure was 108/66 mm. of mercury. He weighed 65 pounds. A complete general physical examination was negative except for a moderate medial strabismus, and the presence of a fairly smooth, well-defined, rounded mass at the base of the neck anteriorly, just to the right of the midline, measuring about 4 by 3 cm. Its position and its ascent on swallowing indicated the thyroid gland as its most probable site of origin. There were no physical signs suggestive of hyperthyroidism.

On August 11, 1948, under intratracheal gas-oxygen-ether anesthesia, a typical collar incision was made. There was a solitary adenoma of the right lobe of the thyroid gland measuring 3 to 4 cm. in diameter. The adenoma was dissected free, taking along a margin of normal thyroid tissue around the entire nodule. After hemostasis had been effected, a small Penrose drain was placed in the thyroid space, the strap muscles were loosely approximated in the midline, and the skin was closed with a running subcuticular stitch of fine catgut.

The pathological examination indicated the following: The specimen consisted of a thyroid tumor that measured 3 by 4 cm. It was circumscribed, pale gray on cut section, and the center was partially cystic and showed some degenerative changes. The capsule was thick and fibrous. The surrounding gland showed nothing of note grossly. The microscopic picture indicated an adenoma composed of dilated acini that were well-filled with colloid, lined by cuboidal epithelium. In some areas the epithelium was hyperplastic and had a papillary appearance. The picture for the most part was that of a colloid adenoma. The surrounding thyroid showed nothing of note. The pathological diagnosis was benign adenoma of the thyroid gland.

The patient's postoperative course was uneventful. He was allowed out of bed on the second postoperative day. The drain was removed on the second day, and the patient was discharged from the hospital on the fifth postoperative day.

The boy was last seen on July 12, 1949, at which time he was in excellent health. He had gained 18 pounds since the operation (about one year previously), and there was no evidence of recurrence of thyroid adenomata.

Summary

1. Adenomas of the thyroid gland are unusual in preadolescent children. Indications for their surgical removal are cosmetic, mechanical, or the possibility of malignant change. It would appear that this latter possibility is greater in young children than it is in adults.

2. The case of a nine-year-old boy with a solitary adenoma of the thyroid gland is reported. Surgical excision of the adenoma was carried out.

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Case Report

MALARIA WITH GENERALIZED PETECHIAE

Report of Case

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A REVIEW of medical literature devoted to a discussion of the signs and symptoms of malaria frequently mentions several types of skin involvement. Herpes, urticaria, jaundice,[2,3] spider nevi,[4] and erythematous desquamation[2,3] are described.

Bispham,[2] in a discussion of the pernicious fever in the hemorrhagic type of malaria, mentions that the body may have dense indurated swellings due to large extravasations of blood or may be covered with petechiae, but he reports no specific cases.

Case Report

E. C. K., a Korean man, aged forty, came to the dispensary April 2, 1948, stating he had been well until four days previously when he had developed a slight sore throat, coryza, anorexia and headache. Shaking chills and generalized malaise followed in twenty-four hours.

He had a temperature of 102° F., pulse rate 144, pharyngitis and petechiae on the ankles and wrists. He was admitted to the hospital with a tentative diagnosis of meningococcemia.

Pertinent physical findings after admission were as follows: There were numerous petechiae about 1 mm. in diameter about both the ankles and wrists. The petechiae did not blanch with pressure. The pharynx was moderately reddened without exudate. The liver border was palpated 1 to 2 cm. below the right costal margin and was not tender. The spleen was definitely enlarged, palpable 3 to 4 cm. below the left costal margin. It was not tender. A blood culture was taken immediately on admission, and 100,000 units of penicillin were given.

The laboratory findings on the day of admission were as follows: white blood cells, 4700; hemoglobin, 14.2 grams; 74 per cent neutrophiles, 18 per cent lymphocytes, 8 per cent monocytes. Examination of a blood smear revealed many malarial parasites. These were identified as plasmodium vivax by the parasitology laboratory. The urinalysis was negative. A nose and throat culture was negative for Neisseria intracellularis and showed many alpha streptococci. A blood culture taken on April second was sterile on the seventh day, and pour plates were sterile at seventy-two hours. The coagulation time was 1 minute and 30 seconds, and the bleeding time 4 minutes, on April 3. Prothrombin time was 16.2 seconds with a control of 14.1 seconds. The platelet count was 206,000 on April 6.

On the day of admission chloraquine was given with an initial dose of 1.0 gm., with 0.5 gm. in six hours, and 0.5 gm. on each of the two days following.

On the second day of his hospitalization the petechiae were generalized and the liver and spleen were noticeably tender. His temperature dropped to normal on this day and stayed normal throughout his hospitalization of six days. The pulse rate dropped to 80 per minute and remained at that level. The petechiae began to fade on the fourth day.

After the patient's discharge on the sixth day he was seen regularly in the dispensary. He felt somewhat tired but otherwise had no complaints. He took 0.5 gm. of chloraquine weekly for five weeks. He was last seen on May 25, 1948, fifty-seven days following the onset of his illness, and he had no complaints at that time.

Discussion

The patient was a forty-year-old physician from Korea who could not recall any case of malaria with petechiae in his country. He had left Korea to arrive in the United States six months prior to this illness. He spent six moths in Detroit and came to Minneapolis one week previous to this illness.

He gave a history of an illness at the age of eight, and it is his impression that it was malaria. He has had no illness since that time.

This case is presented because generalized petechiae are an unusual finding in malaria.

Summary

A case of tertian malaria with generalized petechiae was seen in a forty-year-old Korean physician who had been in this country six months.

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History of Medicine In Minnesota

MEDICINE AND ITS PRACTITIONERS IN OLMSTED COUNTY PRIOR TO 1900

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(Continued from the September issue.)

A physician of Rochester stated that in smallpox the emanations from the body of the diseased person were so heavy that they sank to the earth, whereas in scarlet fever the poison was so light that it permeated the atmosphere and one case might be sufficient to spread the disease over a whole city. From another source, a few years later, came the statement that smallpox was being scattered throughout the continent by thousands of buffalo robes that had been used by the Indians to cover the corpses of those among them who had died from smallpox.

There were warnings against too frequent bathing. Typhoid fever, in one statement, was ascribed to accumulations of old paper on the walls of rooms, where one layer upon another had been pasted for years. One editor decried the pernicious habit of backing infants around the streets in baby carriages as a cause of insanity in later life, and said that if the Creator had intended this way of amusing babies he would have located their faces on the other side of their heads. Another said that the majority of people who died from heart diseases were victims of congestion of the lungs also.

The danger of turning kerosene lamps low and of burning them all night was pointed out: "There is no doubt that the alarming prevalence of diphtheria of late years can be traced to this as one of the producing causes." Various prescriptions were published, evidently taken from other newspapers in different parts of the country, usually without giving credit, for the cure of diseases. One for use in diphtheria appeared in the *Rochester Republican* of February 18, 1863:

> Remedy for Diphtheria: Make two small bags that will reach from ear to ear, and fill them with hot ashes and salt; dip them in hot water and wring them out so that they will not drip and apply them to the throat; cover up the whole with a flannel cloth, and change them as often as they become cold, until the throat becomes irritated near blistering. For children, it is necessary to put flannel cloths between the ashes and the throat to prevent blistering. When the ashes have been on a sufficient time, take a wet flannel cloth and rub it with castile soap until it is covered with a thick lather; dip it in hot water and apply to the throat, and change as they cool; at the same time use a gargle made of molasses, in a teacupful of hot water, and when cool, add one fourth as much cider vinegar and gargle until the patient requires sleep. A gargle of castile soap is good to be used part of the time.

Rules of health were quoted from early medical publications, among them Trall's *Herald of Health* and Hall's *Journal of Health.* From the latter, from a list of ten rules on care of the eyes, comes the following: "Never pick any collected matter from the eyelashes or corners of the eyes with the fingernail; rather moisten it with the saliva and rub it away with the nail of the finger."

About Asiatic cholera, in 1866 one editor said, "We know of no better preventive for the cholera so much talked of but which we don't believe we can get here for a couple of years yet, at the soonest, than the following: 1. Never speak

or think of it. Banish it from your home and circle as a topic of conversation. 2. Be cheerful. 3. Be temperate. 4. Be cleanly. 5. Beware of whiskey and the Democratic party." As it happened, the only case of Asiatic cholera ever diagnosed in Olmsted County occurred in August, 1866, when the patient, an immigrant en route west, died at the City Hotel in Rochester. About the disease, in this period, a Winona editor said. "Don't get scared. If you get sick, go see an educated physician, and you will be in no more danger of dying than usual."

As to whisky, as early as 1862 the *Rochester Republican* warned against the pains and penalities consequent on the use of strychnine whisky that were becoming distressingly apparent in the streets of Rochester almost every day, and urged strong measures for the control of persons under the influence.

Scope of Medical Practice.—The early physicians were called on to give aid in all the ills of the day.

Highly annoying, in the earliest years, were the pestiferous prairie itch and sore eyes, and the sharp discomfort of harvest time that came with the binding of wheat by hand, before the days of mechanical binders. The wheat straw wore the finger nails of the workers down to the quick after a few days in the field, bringing acute pain and temporary disability. Some physicians recommended application of tannin or of a solution of alum to harden the fingers, but these remedies had little effect. Some farmers postponed the binding until night, when dew had softened the straw.

There were painful and crippling injuries requiring surgical treatment, which will be discussed later. There were fever and ague, the "dry, bracing climate" notwithstanding. "Yellow jaundice" was common. A true story runs that a visitor in Rochester in that early period wondered aloud what was wrong with the numerous saffron-colored persons he met at every turn; a Dutchman who overheard him said, "Dese am de yellow ganders." Coughs, colds, croup, catarrh and pneumonia were common. There were frequent, and often lethal, cholera infantum and cholera morbus and dysentery. In 1873, when there were many deaths among children from cholera morbus, the disease was described as "not unusually fatal." There were chickenpox, German measles and mumps, scarlet fever, the dreaded but accepted autumnal typhoid fever, and diphtheria and smallpox. Cerebrospinal meningitis took its toll; in 1870 Dr. Hector Galloway gave before the state medical society a detailed report of thirteen cases that he had observed in 1863 in Oronoco Township. Prior to 1872 epidemic diseases received such attention as the faulty knowledge of many of the practitioners and the lack of co-operation on the part of the laity made possible. After the establishment of the state board of health in 1872, and when the authority of the board in matters of public welfare had been increased, there came consistent study and attempted control of epidemic diseases, an undertaking in which all physicians were concerned.

In 1866 and later, hydrophobia broke out in different parts of the county, causing great loss among cattle and hogs, and among dogs, which were sacrificed in considerable numbers, either because they were affected or because they were under suspicion. At this time several persons suffered from an affliction that popularly was diagnosed as hydrophobia, but later was said by physicians of Rochester, "equal to any in the state," to be tetanus.

Trichinosis, variously referred to as trichinae and trichinae disease and trichiniasis, was a subject of editorial comment. The first item that has been noted in the Rochester papers appeared in March, 1866, and was headed "Diet of Worms: and We Do Not Mean the Diet That Bothered Luther." This was a facetious dissertation that ended, "There has never been a greater hoax or humbug

than the sensational articles about the trichina." Next it appeared that the disease was affecting the New York hog market seriously, and then came reports from the Federal Department of Agriculture, giving advice to farmers about the medical treatment of their hogs against all types of vermicular infestation. It was not until March 28, 1884, that the *Rochester Post* mentioned trichiniasis among human beings in Olmsted County, probably the first recognized occurrence of the disease in man in this region. A husband and wife and their six children, living in northern Olmsted County not far from Elgin, Wabasha County, had been attacked about six weeks earlier with "a severe and mysterious disease from which they suffered some time before the nature of it was known. They . . . called the Drs. Mayo [W. W. and W. J.] of this city, who at once pronounced it trichiniasis. The pork from which the family had been eating without cooking was examined through the microscope by the doctors and found to contain large numbers of the parasites." The mother died from the disease and it was expected that some of the children would not recover, as most of them were almost completely paralyzed. "The family removed to this state recently from Wisconsin, and it is understood that they brought the pork with them, so that there is not the least danger of the disease spreading. While there is probably no diseased pork in Minnesota, it will be best not to eat it without its being first thoroughly cooked."

In the first twenty-five years of the country's history, obstetrical work, except in the presence of recognized complications, was handled largely by midwives or by women who were neighbors of the patients. By 1880, chiefly in Rochester and the villages, physicians were being called more often to officiate at normal births. In the earlier period an occasional physician who was a member of the state medical society would report an obstetrical case or a gynecological case of special interest; some of the reports are preserved in the transactions of the society. By the early eighties, it is evident, the practitioners had better knowledge of these fields, and they were discussing at their official meetings, in addition to other conditions, postpartum hemorrhage, puerperal infection and peuerperal insanity.

The opening of the Second Minnesota Hospital for Insane at Rochester, in January, 1879, marked the beginning of a new and continuing interest on the part of the local general practitioners in nervous and mental diseases of all types. The cordial relations between these practitioners and the physicians of the hospital staff, and the active participation of the latter in due time in the work of the county medical society, led to broadening of scientific viewpoint.

Little evidence has been noted of special study of diseases of the blood in Olmsted County prior to the late eighteen seventies. In 1877 Dr. W. W. Mayo jotted brief notes in an old case book about a young girl of Rochester whom he was treating for purpura hemorrhagica. In the transactions of the Minnesota State Medical Society for 1878 appears his detailed report of the case, the second of the type in his experience, describing his method of diagnosis, which included microscopic examinations of blood and excreta, and his cure of the patient by rigid control of her diet and by administration of turpentine internally for more than a year. In his account the doctor took less credit than was given him sixty-eight years later by the patient's relatives, who said that after physicians from different cities in southern Minnesota had given the girl up to die, Dr. Mayo was called, with the result stated. The patient lived to the approximate age of seventy years.

As the eighties passed and as the nineties progressed, the physicians of Olmsted County were discussing at medical meetings, from changing points of view, a wide range of subjects. A few topics were, diseases of the blood, nephritis, cirrhosis of the liver, the pneumonias, asthma, rheumatism, heart disease and the uses of

digitalis, atrophic rhinitis, mastoid diseases, spinal disease, erysipelas and "facial poisoning," the intestinal diseases of children, leprosy, exophthalmic goiter, the therapeutic uses of electricity and, as will be shown, the diagnostic and therapeutic value of the x-rays and advances in the art and science of surgery.

Recorded Causes of Death Prior to 1900.—One estimable early physician, in reporting illnesses and deaths, used with great frequency the expressions apoplexy of the lungs, dropsy of the heart, and dropsy of the brain; when he performed tonsillectomy, he removed the "tonsil glands." In 1867 Dr. Galloway reported the death of a man in Cascade Township from glanders. When, in 1870, however, he described before the Minnesota State Medical Society his cure of glanders with carbolic acid, the disease having been transmitted from horse to man, the society resolved that the doctor should trace back to the animal from which the disease was contracted and should present the report in writing. In August, 1871, when a man died at Rock Dell after a bout of social drinking, Dr. D. S. Fairchild, of High Forest, and one of the Drs. Cross, of Rochester, performed a postmortem examination. They reported, "He died from an overdose of whisky taken on an empty stomach, which produced congestion of the brain and lungs and inflammation of the stomach, the two latter conditions causing death."

A list of the causes of death compiled from newspapers of Olmsted County prior to 1870 includes most of the pathologic conditions already mentioned in this paper as occurring in that period. Reference to the records of Olmsted County, beginning in 1870, has given the following causes of death, which are quoted here verbatim: No knowing disease, old age, died at birth, abortion, bastard, puerperal fever, croup, typhus, typhoid fever, bowel complaint, cholera morbus, cholera infantum, dysentery, bloody flux, defective bowels, inflammation of the bowels, stomach disease, cancer of the stomach, paresis, nervous fever, brain fever, congestion of the brain, scarlet fever, influenza, catarrhal fever, heart disease, cyanosis, pneumonia of the lungs, phthisis, consumption, ulcerations of the lungs, accident, general debility, and prostration. By the eighties the nomenclature was approaching standardization. Beginning in 1888, in addition to the foregoing causes of death, there appeared "Potts' disease of the spine," spina bifida, albuminuria, heart paralysis from overdose of Gelsemium, phthisis and exhaustion from chronic melancholia, epilepsy, erysipelas, sanguineous apoplexy, inflammation of the stomach, tumor, neuralgic affection of the sciatic nerve, and gallstones. The death from gallstones, in 1898, followed cholecystectomy.

Scope of Surgical Practice Prior to 1900.—In Olmsted County the advance in knowledge of surgical diagnosis and surgical technique and of anesthesia and anesthetic agents was more dramatic than was progress in the science of internal medicine.

Although in the ordinary course of practice there were occasions for bleeding, for excision of wens and other superficial growths, and for the setting of broken bones, the early major surgery was that of expediency. Many accidents occurred in the course of hunting, milling, lumbering, and especially in farming, after mowers, reapers, binders and threshing machines came into use. The earliest models of these labor-saving machines lacked protective devices, and as a result many farm workers were victims of accidents that necessitated drastic surgical procedures. There is record of trephination, crude débridement, amputation of mangled fingers and toes, and arms and legs, and attempted repair of injuries in thorax and abdomen. There were occasional crude attempts at plastic surgery.

Prosthetic surgery other than the use of peg legs and glass eyes was practically unknown.

Until the middle eighties medical ethics did not refuse the public the interest of reading occasionally about their neighbors' illnesses, accidents and, especially, surgical operations, and by the same token, about new equipment purchased by local physicians. If a member of the medical profession acquired an unusual instrument or therapeutic appliance, colorfully illustrated books or anatomical charts, an English gig or a Dexter side-spring phaeton or other vehicle, or installed a telephone (the drumhead type in 1879), or bought a piece of office furniture, the press described it in glowing terms: As when, on August 14, 1885, the *Record and Union* of Rochester announced that Dr. W. A. Allen had acquired a fine modern accessory for his office, "a beautiful and most convenient operating chair. It is upholstered in crimson morroco and is capable of being put into any desired position." From that period it is remembered that two able carpenters and contractors of Rochester, Mr. Nevin C. Pollock and Mr. William F. Riedell, built for local physicians and surgeons examining tables and operating tables of solid oak at twenty-five dollars each.

The best efforts of the press, however, were given to describing injuries and the surgical treatment carried out for their repair. One of the earliest of such operations reported was performed in December, 1860, by Dr. C. S. Younglove, of Rochester, on a citizen of High Forest who, in focussing a Sharp's rifle, shot himself: "The ball entered about the middle of the thigh, traveled along the leg and under the skin, severing some small blood vessels on the inside of the knee, and came out near the ankle making an ugly channel for itself." Under Dr. Younglove's care the man recovered. In August, 1865, Dr. E. C. Cross and his brother Dr. E. W. Cross had a notable case of gunshot wound. "The whole charge of the gun entered the person of Mr. B——— in the left side, passing from near the abdomen through to the hip and passing directly under the surface near the backbone. The surgeons decided to extract the charge by making an incision directly over the point where it lay. The operation was successfully and skillfully performed, the gun wadding, shot and fragments of clothing and several pieces of bone being removed from the wound. The patient bore the painful operation manfully, without the aid of anodyne of any kind, though feeling quite prostrated upon the completion of the operation." The patient lived.

During the early years the Drs. Cross, W. W. Mayo and Galloway were the surgeons of Olmsted County who carried out the greatest number of major surgical procedures. In August, 1869, for example, Dr. E. C. Cross, Dr. Mayo and Dr. Galloway amputated the left leg of a man fifty years of age for a sore that had existed, increasing in size, since the patient was ten years old. "The patient was put under the influence of chloroform and the operation was successful. . . . He is doing as well as can be expected" In 1878 Dr. Mayo, assisted by Dr. E. W. Cross, operated on a farmer whose arm had been injured in a threshing machine accident seven or eight months earlier. They removed the dead bone, shortened the arm and brought the ends of the bone together: "They used a new system of compression rubber bands instead of a tourniquet. . . ."

In the decades before there were local hospitals, patients who received surgical aid usually were operated on in their homes. By the seventies, in Olmsted County, Dr. Mayo and other surgeons of Rochester had begun to utilize rooms in local hotels for operating rooms and for postoperative care of patients from out of town. Beginning in the eighties Dr. Mayo had for several years a small hospital

of eight or nine beds in the home of a practical nurse in north Rochester,* where the Samaritan Hotel now stands. As he extended his surgical frontier in answer to conditions of emergency, there were editorial notes on various procedures: drainage of thoracic abscess, tracheotomy (on a child who had had diphtheria), amputation of the breast for cancer (the patient a woman eighty-three years old), removal of submaxillary blood tumor, repair of rectocele, and removal of ovarian tumor. About the last named, it is true, the accounts stressed chiefly the size and weight of the growths removed. In Minnesota, between 1874 and 1880, ovariotomy was done only ten times and only twice successfully. In December, 1880, after designing the necessary surgical instruments and having them made by the patient's husband, a local blacksmith, Dr. Mayo performed his first operation for excision of ovarian tumor and the first of the kind to be performed in Olmsted County. He was assisted by Drs. J. E. Bowers, as anesthetist, and S. W. Gould, both of Rochester, and G. B. Ayres, the professor of anatomy and clinical surgery at the Omaha Medical College of Nebraska; Dr. Ayres had been an early student of medicine under Drs. Galloway and Sanborn, in Rochester. The ovarian tumor removed weighed eighteen pounds: ". . . after removing the tumor there was a large abscess ruptured in the abdomen and two quarts of matter ran among the intestines. It had to be carefully removed with a soft sponge. This and to stop the bleeding took twice the length of time as to remove the tumor. The woman was over an hour under the influence of ether. . . . This operation and its success place Dr. Mayo among the first surgeons of the state."

With the entrance of Dr. W. J. Mayo into practice, in 1883, there was for a time editorial mention of surgical operations in new fields, among them removal of cataract, removal of an upper left jaw for cancer, correction of stenosis of the esophagus that had resulted from swallowing lye, orthopedic procedures, plastic operations on the face (one of these procedures was the creation of lips and nose on a child of three months, at Spring Valley, because of congenital deficiency of those parts), opening of a large renal abscess, procedure for correction of strangulated hernia, excision of a diseased portion of bowel for tumor or abscess and uniting of the sound ends of the intestine, and operations for "inflammation of the bowels." After the coming of Dr. C. H. Mayo, in 1888, the field was extended to include many other operations, including plastic and orthopedic and, particularly, operations on the thyroid gland. It is believed that Dr. W. J. Mayo, fresh from the teachings of Dr. Donald MacLean, professor of surgery at the University of Michigan, and later taught by Dr. Arpad C. A. Gerster, of New York, was the first in Olmsted County consistently to apply listerism. From the beginning, the surgical work of himself and his brother was carried out on principles of asepsis and antisepsis.

Although some practitioners of Olmsted County early accepted asepsis and antisepsis, there were many others who were slow to do so. Reminiscence has given sidelights on surgical practices long since discountenanced. A certain general practitioner of Rochester for some thirty years, beginning in 1885, no doubt was typical of many. The doctor pulled teeth "without pain," first washing out the patient's mouth with some preparation that tasted like carbolic acid, an old-time patient of his has said, a solution so strong that it nearly blistered the oral membranes and left them sensitive for days. For goiter he gave iodine internally and injected hot water and carbolic acid into the thyroid gland. In treatment for pneumonia he used linseed meal poultices and a pneumonia jacket.

*In the earlier decades of Rochester the large portion of the city that extended far north of the Original Town (so designated on an official map of 1874), which ended approximately at what is now Sixth Street, N. W., commonly was called "North Rochester." East Rochester was the official name of a portion, now in the southeastern section of the city, that lay east of the southern portion of the Original Town. Comparable designation was not given, it is believed, to the gradually developing western portion of the city.

Like many of his contemporaries in the eighties and nineties he performed a limited number of surgical operations in his office, among them an occasional amputation of the breast, and the last type, certainly, in a manner impressively casual. One day when he was in the midst of amputating a breast for cancer he needed help, and, leaving the patient, who was under general anesthesia, unattended on the operating table, he went to another building to seek a young businessman who sometimes lent him a hand. When he returned with the helper, the patient fortunately was still safely on the table. The doctor dissected out the breast, reached up on a shelf for a roll of gauze, tore off a length and stuffed it into the wound. During closure of the wound he happened to drop his needle and thread on the dusty floor, picked it up and went on sewing. Some time later, when the assistant inquired apprehensively how the patient had got along the doctor said, "Oh, she is doing all right."

By the middle eighties detailed references in the public print to the work of individual physicians and surgeons had become few and brief. When practitioners were mentioned in the papers, it was to state that they had attended medical meetings, had read papers before medical societies, had been elected to office in the societies, or were members of boards of health, local or state.

There were, however, a few exceptions to the tacit rule governing publicity. When St. Mary's Hospital† was projected and when it was opened, on September 30, 1889, the local papers gave it much space, and rightly, for there began with this hospital a new era of medical and surgical care of the sick in the county. Again, on September 12, 1895, there appeared in the *Olmsted County Democrat* the following note: "Caesarian Performed at St. Mary's. This is a very rare circumstance and there are very few cases of it on record in the country. All of the medical fraternity will be interested in the case, and it was very unfortunate that the neighboring physicians could not be informed in time to witness the operation. Another striking thing about it is that both mother and child are doing well." (The operation was performed on Mrs. Le B——— on September 6, 1895.) On March 6, 1895, the *Rochester Post* reprinted an article, "The Ray of Mystery," by George Grantham Bain, which had appeared in the *New Yorker* of February 28, 1896, from which one sentence is given here: "Probably no such popular furor for a purely scientific discovery was ever excited before as has grown out of exploitation of the new photography with the aid of the X-ray or Roentgen Ray, as it is popularly known." The x-rays had been announced to the world by Roentgen in 1895. In Olmsted County young Dr. J. Grosvenor Cross was the pioneer in making clinical application of roentgenography. He assembled a workable apparatus and after much study and experimentation was able to display before the Olmsted County Medical Society in January, 1896, and before the Southern Minnesota Medical Association in August, 1896, successful pictures of the hands of a living subject. The local newspaper in reporting these medical meetings stated that Dr. Cross's confreres had expressed great interest and pleasure in the demonstrations. Soon there was record in Rochester of the location with the x-rays of foreign bodies that had been swallowed or that had become embedded in bodily tissues. A few years later certain physicians of the county were reporting the beneficial results of roentgenotherapy in treatment for cancer.

Throughout the eighties and nineties the scope of surgery as practiced in the county continued to broaden, until by 1900 there were few, if any, procedures performed elsewhere that were not carried out successfully by the local surgeons.

†A brief history of the hospital is given elsewhere in this paper. Originally the name of the hospital was spelled "St. Mary's"; in recent years the apostrophe has been dropped. In this account the early form is used throughout.

The Drs. Mayo, of Rochester, because of superior facilities for work and for graduate study, and because of their recognition of need and opportunity, were leaders in this work.

Public Welfare

The earliest example of extra-home care was, no doubt, the relief and maintenance of the sick poor, always by local agents. The abating of nuisances injurious to health and comfort early followed, and there was quarantine against smallpox and other contagious diseases. The Minnesota Code of 1851 authorized justices of the peace, village trustees and city councils to exercise these functions. The General Statutes of 1866 made the supervisors local boards of health.

William Watts Folwell, *A History of Minnesota,* 1921, iv, 413.

Olmsted County, as stated earlier, was established by the territorial legislature on February 20, 1855. Within the next few months the county government was organized in accordance with territorial legislation, in the interest of public welfare. Supervisors of the poor were appointed and registration of marriages was instituted in 1855. Four years later the office of coroner began to function, preceding by several years the activity of county physicians and special health officers.

The County Coroner.—In Minnesota the elective office of county coroner was established by territorial legislation in 1849. Until 1854 the law authorized any justice of the peace or judge of probate, on occurrence of a death by violence and in the absence of the coroner, to appoint a suitable person as deputy coroner. Amendments, in 1854 and in 1871, improved the functioning of the office by more formal appointment and instruction of deputy coroners. In most localities for a decade or more after 1849 the coroners were laymen; the term of office, originally two years, in 1913 was extended to four years.

On January 4, 1859, the first coroner of Olmsted County, Abram Harkins, of Viola Township, was appointed by the county supervisors. In the autumn of that year the office was filled by the election of Stewart B. Clark, of Rochester, who served his full term, it is believed. Information is lacking about the coronership in the ensuing four years. There is some evidence that in 1865 D. L. King, of Kalmar Township, served for a time either as coroner or as deputy. In the autumn of 1865 Dr. Hector Galloway, of Rochester, was elected coroner.

An item from the *Rochester Republican* of January 31, 1867, to some extent lightens the obscurity of the earlier records:

County Coroner: Within the last year and a half several cases have arisen in this county especially requiring the services of a county coroner. Two or three infanticides have occurred in the city in the time referred to, involving, of course, guilt and criminality. For the one year chronicled, these outrages have been allowed to pass without investigation and the community is allowed to settle down into the belief that killing infants and casting their little bodies into the river is not very reprehensible after all.

The sudden death of Mr. Delano [Clark Delano, marble dealer, a suicide] last week suggested anew the necessity for the services of a coroner. The coroner is a county officer and we believe that Olmsted County has promptly elected a person to that office every other year since we have been a resident of the county. But the trouble is, those who have been elected have failed to qualify and serve in that capacity, and we more than suspect that this failure is attributable in some degree at least to the fact that the county commissioners have declined voting a reasonable compensation.

(To be continued in the November issue.)

President's Letter

THE COMING MEDICAL MEETINGS

DOCTORS who have vacationed themselves into a state of healthful relaxation are looking forward eagerly to the fall and winter schedule of medical meetings and their contingent opportunities for scientific advancement and comradeship with fellow doctors.

Two excellent meetings—those of the Northern Minnesota Medical Association and the Southern Minnesota Medical Association—were held last month, opening a season that will include state, national and international conferences of exceptional merit.

One large specialty group will be assembling next month: the Third Inter-American Congress of Radiology is taking place in Santiago, Chile, November 11 to 17.

Many another session will be heralded in MINNESOTA MEDICINE and the *MSMA Newsletter* so that doctors will be apprised of meetings abroad, and no further away than the University Continuation Center or County Medical Society assembly places.

Medical meetings serve another purpose, too, in these critical times. It is essential for all of us doctors to understand thoroughly the problems that we are facing, problems which not only affect our professional standards, but the lives and health of all our patients.

As we consider these philosophies and movements and the trend of events, we come to see the entire picture with forceful clarity. Because we are thinking together, with common motivation and objectives, we are able, as a profession, to make the most constructive moves on behalf of our patients and ourselves.



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

HYPERTENSION AND SYMPATHECTOMY

THE GENERAL practitioner and internist are frequently called upon to advise patients with elevated blood pressure. When, if ever, should he advise a dorsolumbar sympathectomy in preference to medical treatment?

The operation of sympathectomy is a serious operation which sacrifices part of the reflex nervous system, is frequently accompanied by serious symptoms of shock postoperatively, often prolonged convalescence associated with neuritic pains, and orthostatic hypotension requiring bandaging of legs and abdominal support for weeks and sometimes months following operation. It would seem that such a procedure should not be undertaken unless the symptoms warrant and unless the results of the operation are likely to relieve the symptoms for a long enough period to be worth while.

Evelyn et al have analyzed 292 of the sympathectomies performed for essential hypertension at the Massachusetts General Hospital during the past thirteen years. Of the 292 patients, 219 were living and seventy-three dead. The authors were able to carefully check 114 of the patients for comparison of blood pressures before and after operation, and found an average reduction of systolic pressure from 177 to 152 and diastolic from 116 to 100 with the patients lying in bed. They found that the common pattern was for the blood pressure to go down after operation and to remain down for a year or two and then, for many, progressively to return to preoperative levels. In a surprisingly large number of patients, however, the operation had little or no effect on either systolic or diastolic pressures. The striking reduction in blood pressure in the erect position encountered in some patients postoperatively tended to disappear at the end of a year.

The authors were able to study 100 patients who had been operated upon by the Southwick technique (removal of the ganglia from the 8th to 10th dorsal to the 1st or 2nd lumbar, inclusive) for as long as five years. They found that satisfactory results, as measured by lowering of blood pressure, had been attained in approximately two out of five patients two years after operation and in approximately one out of five after an interval of five years. While these results may not be impressive, the authors feel that the excellent results attained in a small percentage of cases cannot be equaled by any other available treatment.

What can be expected from medical treatment of hypertension as regards life expectancy? The answer, of course, as any life insurance company will verify, is that hypertension on the average reduces life expectancy. When it comes, however, to evaluating the life expectancy of an individual with hypertension several factors come into consideration. There is essential hypertension with little or no evidence of vascular degeneration or kidney involvement which is comparatively benign. And there is rapidly mounting hypertension with eye background hemorrhage and edema of the disc and evidence of severe renal damage, commonly known as malignant hypertension. The prognosis for the benign type is very favorable while that for malignant hypertension is very bad. Furthermore, individuals who develop hypertension after the age of fifty, as a rule, nearly reach their life expectancy. Hypertension, even of extreme degree in elderly people, especially if associated with relatively low diastolic pressure, the result of arteriosclerosis, does not carry with it as unfavorable a prognosis as in the younger group under fifty. According to Burgess,[1] hypertension even of excessive degree that has been present eight years or more and is not associated with well-established cardiac or venal disease usually does not indicate a poor prognosis as to life expectancy. Such hypertension, according to him, does not commonly develop into the malignant type. The most common causes of death in this group are cardiac failure and cerebral accident. Also, according to this author, hypertension of this comparatively benign type, even when making its

appearance before the age of fifty, is comparable with a considerable number of years of life, although life expectancy is materially reduced. He believes sympathectomy is therefore questionable in this group.

It would seem, then, that medical treatment with sedatives, a rest period during the day and at least nine hours of rest at night is unquestionably the treatment for benign hypertension irrespective of age. The physician must not be guilty of overemphasizing to the patient the importance of the hypertension but should watch for a sudden change in the picture with appearance of evidences of degenerative, vascular changes and headaches. Before this evidence becomes too marked, if the pressure is labile and responds to sedatives and rest, especially if the patient is under the age of forty, sympathectomy should be seriously considered.

Even in the presence of marked evidence of degenerative vascular changes, as evidenced by retinal hemorrhage and albumen with occasional casts in the urine, sympathectomy, according to Rogers and Palmer,[3] may be brilliantly successful. On the other hand, in the presence of marked impairment of renal function or frank heart failure, the operation is contraindicated.

Even though sympathectomy results in satisfactory lowering of blood pressure, which is sustained for two years in only two out of five patients operated upon and for five years in only one of five—and probably even that favorable a result is not obtainable if operation is limited to the more advanced cases—nevertheless, if several years of life with relief of symptoms can be added even in a small percentage of cases, sympathectomy is the best therapeutic means at our disposal.

We wish to emphasize however that individuals with hypertension even of considerable degree but without evidence of cardiovascular change beyond increased light reflex in the retinal vessels and slight albumenuria, will do well as a rule with medical direction and should not be subjected to sympathectomy.

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CORTISONE AND ARTHRITIS

PHYSICIANS receive queries from arthritis patients as to Cortisone, also known as Compound E, the new "cure" for arthritis, which has received considerable publicity.

The answer is that the use of Cortisone is still in the experimental stage, the supply is very limited, the cost, like all newly developed extracts, is very great, and it is not on the market.

According to an article in the September issue of *Hygeia,* Cortisone is a hormone which was first extracted from the suprarenal glands of cattle by Dr. Kendall of the Mayo Clinic in 1935. Production of a sufficient amount for experimental work with Navy fliers at high altitudes was obtained by 1948. By that time the interest of the Navy had waned and the extract was made available to Dr. Hench of the Mayo Clinic for trial in patients suffering from rheumatoid arthritis. Dr. Hench reasoned that the remissions in the disease which sometimes occur during pregnancy and jaundice might be due to an increased production of some antirheumatic substance in these two conditions and that it might come from the adrenal glands. Bilirubin, it seems, contains many of the chemicals found in the suprarenal secretion. The trial proved successful in a necessarily limited number of patients with rheumatoid arthritis. Daily injections seem to be required for maintaining the improvement in symptoms.

A further approach to the research in rheumatic disease is the extraction of a hormone from the anterior pituitary gland of animals, called ACTH, which has an effect similar to Cortisone. The production of ACTH is also limited. Cortisone is at present extracted from animal bile, and the process is an expensive one. If and when it can be produced synthetically, its lower cost will allow more extensive trial.

E. T. BELL FUND

UPON the retirement of Dr. E. T. Bell, Professor of Pathology at the University of Minnesota on June 15, 1949, steps were taken at the suggestion of many of his admirers to raise a fund of $100,000 to establish and maintain a Museum of Pathology in the Medical School for teaching purposes.

Dr. Bell has served the Medical School since 1910. He first taught in Anatomy and from 1911 until 1949 in Pathology. Since 1921 he has been

chief of the Department of Pathology. During this period he has made valuable contributions to the science of pathology and has made his influence felt through his teaching and writing. Through his co-operation and his personal qualities he has endeared himself to many graduates of the Medical School and to practitioners throughout the state. It seems fitting that a Museum of Pathology should be established through voluntary contributions by his many friends.

Contributions have been received during the summer months and the campaign will be continued throughout the next year when it is hoped the goal will be reached.

Contributions designated for the E. T. Bell Fund should be sent to the Minnesota Medical Foundation, at 132 Medical Sciences Building, University of Minnesota, Minneapolis 14, Minnesota. Some confusion may have arisen with regard to the relationship of the Minnesota Medical Foundation to the Greater University Fund. The Medical Foundation has to do with contributions for medical school activities and formerly handled collections independently. Now the greater University Fund, which is concerned with donations for University activities at large and serves as a public relations agency, has placed its office facilities at the disposal of the Medical Foundation. Donors to the E. T. Bell Fund of the Medical Foundation will be listed also as donors to the Greater University Fund.

Since Dr. Bell's retirement in June, he has devoted himself to research in pathology at the Medical School.

ANTIHISTAMINICS—A WARNING

AN ARTICLE which recently appeared in *The Journal AMA** issues a warning that the antihistaminic drugs are not innocuous, and should be handled with respect.

Many antihistaminic drugs have been offered for the treatment of hay fever and other allergic conditions, which in itself indicates that none has proved 100 per cent efficacious. Untoward side reactions such as drowsiness, vomiting, diarrhea and headaches occur frequently and are doubtless sufficient to cause the patients to discontinue the medication of their own accord.

In the case reported in the article mentioned, a baby sixteen months old died from an acute kidney damage after taking one 100 mg. tablet of Thenylene. Another case is cited of convulsions in a child produced by the same drug. Prompt gastric lavage was credited in saving the child's life. In a third case cited, toxic gastrointestinal symptoms and hematuria resulted in a child three years old from taking 320 mg. of Benadryl over a three-day period.

The significance of the report is that the antihistaminic drugs should not be given to children and should not be left within their reach. Gastric lavage should be promptly initiated in case even one tablet is ingested. Adults should be instructed to discontinue the antihistaminic at the first appearance of an untoward reaction. Dosage should be limited to the minimal amount required to alleviate symptoms, and medication should not be prolonged longer than necessary.

A PSYCHIATRIST LOOKS AT COMPULSORY HEALTH INSURANCE

Good health for Americans is a goal upon which agreement is general. While the physician's professional concern with this goal does not lead him to consider himself as the sole instrument for its realization, yet wisdom about it should be most available to him. Human motivations and personality will finally determine the outcome whatever the plan. No system can function at a higher level than the people who participate in it. Congress cannot legislate a result; it can only legislate a plan. Regardless of the broad humanitarian objectives of the plan, if it is not geared to the motivational factors in American behavior it will be unsuccessful.

On this premise let us examine the personality needs and motives involved in a proposal for compulsory health insurance. This can be best approached by contrasting the present with the proposed situation. The first basic change involves simple arithmetic. There are two participants in the present medical relationship, the physician and the patient; three in the proposed situation, the physician, the patient and the government agency. Psychiatric experience, psychological experimentation and common knowledge agree that the greater the number of relationships the greater the complexity of problems. A person to person relation involves one major interpersonal variable. A three person situation involves three interpersonal variables and three reactions to the interaction of the two other persons—a total of six variables. This represents a six-fold increase in complexity. When we are dealing with three groups, interrelations of astronomical proportions develop.

Now let us contrast the probable motivations involved in the present medical situation with those in the compulsory health insurance proposal. Our present system includes primarily: (1) A patient who is at-

*Rives, Hugh F., Ward, Berl B. and Hicks, M. L.: A fatal reaction to Methapyrilene (Thenylene). J.A.M.A., 140:1022, (July 23) 1949.

tempting to regain or maintain adequate health. This patient's economic security, self-esteem and social prestige depend on a successful outcome; (2) a physician, who personally or by professional referral, is in a favorable position to help. The physician's self-esteem, economic security, social prestige and altruistic needs are directly dependent upon how adequately he can help. Thus both the patient's and the physician's motives converge toward the therapeutic goal. Both persons are anxious to relieve the health problem. The likelihood of favorable results is maximal.

Patients' Motivations

Contrast the present situation with the probable result of the compulsory health proposal. (1) The patient will view the physician as a public servant who has already been paid for his services and who is hence obligated to treat even a non-significant problem; (2) he will tend to feel that his deducted taxes need to be repaid in some way and will insist on being repaid. This will probably result in unnecessary calls, overly long illness disability and hostility toward the government agency and the physician when efficient termination of disability is attempted; (3) the patient is likely to develop a strong dependency relationship with extravagant expectations for help and extreme annoyance at failure. In our culture the emphasis upon self-reliance, and personal initiative makes the dangers of dependency greater than elsewhere. Dependency is generally disapproved here, and in any society results in deterioration and refusal to accept responsibility.

While the foregoing can be inferred from the motivational analysis we need not depend exclusively upon this reasoning. Experience in Great Britain, Germany, the U. S. Armed Forces and Veterans Administration demonstrate that the patients' motivations work in this fashion. These experiences demonstrate that the patient (1) makes unnecessary and picayune demands for attention; (2) has excessively long and frequent minor illnesses and disabilities; (3) becomes excessively and inappropriately critical of medical and governmental service with resultant loss of faith in the physician's ability to cure his illness.

Physicians' Motivations

Now let us examine the probable shift in the physician's motivations. Currently he is concerned with professional and therapeutic adequacy for reasons of self-esteem, social prestige, economic security and personal service. Currently he deals with a patient who attempts active co-operation for much the same reasons. The satisfaction of both persons depends upon their ability to solve the therapeutic problem. Under compulsory health insurance the physician's motivations would be shifted: (1) He will be dealing with a patient whose demands have become picayune and excessive; whose co-operation is reduced and whose hostility has increased. The physician can legitimately be expected to have less interest in the patient just because of these changes; he will also have less time for the patient's real problems. The physician may also be expected to develop a reactive hostility with a further deterioration in therapeutic adequacy; (2) supplementing the foregoing basis for "the brush-off" the physician would have an added incentive under (a) a salary system, to do as little as possible for the greatest financial return or, (b) under a per capita system, to see as many patients as minimally as possible for the maximal financial return; (3) since the physician's responsibility is no longer directly to the patient he would tend to feel less keenly than he now does the need for complete adequacy; (4) since the physician would no longer be completely responsible for the patient, but would share responsibility with a government agency his personal pride in professional excellence would tend to diminish; (5) since the incentive system to which our present generation of physicians is accustomed would be grossly changed they would be less adequately motivated; (6) an intense resentment of the noncreative possibilities of their work, the minor complaints and hostilities of their patients, the irksome dependency and submission to a government agency, and the lowering of the prestige level of the profession might be expected to develop; (7) the high type of person drawn to medicine by our present incentives of humanitarian service, social and self-esteem, and economic adequacy might no longer choose the medical profession. This change would result from the poorer quality of performance possible, the tendency of government to underpay public servants, and the lack of opportunities for personal initiative and gratification under government service. Hence the intellectual and personal qualities of newer doctors would probably be lower than the present levels.

The foregoing psychologically derived observations about physician motivations have also been demonstrated by experience. Various U. S. publicly supported and managed programs, and foreign governments with compulsory health insurance have found: (1) that the quality of medical service deteriorates; (2) that the physician substitutes for the development of clinical maturity a tendency to blame others and shift responsibility; (3) that the physician tends to reduce his adequacy of treatment of all patients for both practical and motivational reasons; (4) that hostility toward both the government and the patient develops with a consequent loss of personal satisfaction and professional effectiveness. All of these factors are reflected in a higher cost of and lower quality of medical service.

Government Agency Motivations

The third group whose motivations complicate the compulsory health insurance picture is the administering governmental bureau. The phenomenal growth of government bureaus in the past few years, and the tendency for each to expand its activities and personnel illustrates part of the problem from this area. The sheer clerical work added to the doctor's already overloaded program would be a source of disruptive irritation. Beyond this, the desire of non-medical administrators to run things would tend to harass and antagonize physicians. This would further facilitate a deterioration in the physician's sense of responsibility and capacity for quality service. Experience with non-medical administrators of health problems has shown that their lack of capacity to understand the ramifications of the problems and their desire to usurp control leads to restrictive interfering rules

and red tape. These inevitably result in deterioration of service. At the same time the physician subjected to these controls develops some apathy about his own adequacy and permits his service to deteriorate because he is unable to do anything about it. Dependency feelings may be expected to develop in physicians under these circumstances. He is no longer a responsible, self-reliant individual because the agency shares the control of the patient.

Cost of Service

Finally, the motivational problems discussed would have a direct and extreme effect upon the cost of service. With increase in patient demands, decrease in patient cooperation and deterioration of physician service we might expect a situation of rising medical costs and deteriorating medical service. The increased costs would constitute an additional motivational hazard for both physicians and patient. Both would be frustrated by the increasing discrepancy of service and cost.

This situation has also been demonstrated in countries which have adopted compulsory health insurance. In Germany between 1885 and 1939 the cost of insurance per member multiplied eight times. In New Zealand the cost has risen from less than $8 million in 1942 to $20 million in 1947. One can maintain that these increased costs are equally shared, but the stated objective of compulsory health insurance is to help people avoid the disastrous economic effects of illness, not to bring equal disaster to everyone.

In summary it appears on motivational grounds that the complexity of health problems would be increased, that disabling sickness would be prolonged, that the quality of medical service would deteriorate, that personal satisfaction and clinical maturity for the physician would be reduced, and that the progress of medical science would be slowed as a result of compulsory health insurance. Whether this deteriorated and inflated medical service would become more widely available can be evaluated on similar grounds.

The foregoing contrast has somewhat over-idealized our present system of medical services. That there are plenty of contemporary problems is quite apparent. These defects are now being remedied, however, by the adoption of voluntary health insurance, by improved medical education and quality of services, and a better distribution of physicians.—Franklin G. Ebaugh, M.D., in the *Rocky Mountain Medical Journal,* May, 1949.

COMPULSORY HEALTH INSURANCE AS A PARTY ISSUE

It would be unfortunate if Compulsory Health Insurance were to be made a party issue by either the Democratic or Republican parties. There is no evidence of a popular demand for the proposal, and it is safe to say that hundreds of thousands of members of both parties are violently opposed to it—so much so that the issue would influence their vote.

The Democratic National Committee was severely criticized by one of its own members, Dr. R. B. Robins of Camden, Arkansas, a committee member, at a committee meeting held in Washington, August 24, 1949, for its support of agitation for Compulsory Health Insurance.

Dr. Robins said, in part:

"The Democratic party is *not* on record in its party platform as favoring Compulsory Health Insurance. At the Philadelphia convention last year, the Democratic party announced support of a National health program for expanded medical research, medical education and hospital and clinic facilities. This does not constitute endorsement or recommendation of Compulsory Health Insurance.

"The Compulsory Health Insurance issue is a bad penny that turns up every few years. It has never obtained sufficient support to merit incorporation in the platforms of either of the major political parties. It has never obtained sufficient support to be legislated in Congress.

"The reasons for its weakness are apparent. In every large nation where government medicine has been attempted, there has been a decline in the quality and quantity of medical services and an increase in their cost. Only borrowed American dollars prevent its utter disintegration in these same countries today.

"Admittedly, some way must be found to take the financial shock out of illness. Voluntary Health Plans are one answer. The proof of this is the rapid growth of these plans. More than 60 million Americans are now insured against the expense of major illness through these plans. They are not yet perfect, but they are being improved all the time, both as to range of coverage and benefits.

"There is a wealth of factual material, including a study by the impartial Brookings Institution, in support of the argument that the voluntary way is the best way to meet the need for budget-basis medical care.

"Not only are hundreds of thousands of physicians and dentists opposed to government-controlled medicine, but there are more than 1500 civic, service, veteran and other organizations, with memberships totaling millions, that have gone on record against it.

"Do we (the Democratic party) want to serve notice on these millions that they are not wanted by this party because they have gone on record against socialized medicine? Compulsory Health Insurance is repugnant to the ideals and convictions of the American people."

NEW MEDICAL JOURNAL

A new journal entitled *Angiology, The Journal of Peripheral Diseases* will begin publication in February, 1950. Dr. Saul S. Samuels, chief of the Department of Peripheral Arterial Diseases, Stuyvesant Polyclinic, New York, will be editor-in-chief. Among the associate editors will be Dr. Alton Ochsner of Tulane University; Dr. Keith Grimson of Duke University; Dr. Leo Loewe of Long Island Medical College; Dr. D. W. Kramer of Jefferson Medical College, and Dr. Gerald Pratt of New York University Medical School.

The new journal will be published by Williams and Wilkins Company, Baltimore.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

STATE SHIFTS OPINION ON HEALTH INSURANCE

If Minnesotans had been given the responsibility, early in 1949, of deciding whether the United States should have compulsory health insurance, the Minnesota Poll indicates that they would have immediately deeded over medical care to the government.

That was in February.

The February 20 issue of the Minneapolis *Tribune* reported the results of the poll thusly:

"President Truman's proposal for government tax supported national health insurance is favored by a majority of Minnesota residents. . . . Almost two in every three adults in addition feel that such a program is needed."

The table of percentages showed that 40 per cent of the state's population had replied "yes" to the question of "Do you think national health insurance is needed in the United States?" Only 4 per cent thought people should take care of themselves and another 4 per cent asserted that private health insurance could do the job. Oddly enough, the same percentage—again 4—thought that "it's too socialistic."

A second report of the survey, published in the February 27 issue of the *Tribune*, began with these words:

"Fully two-thirds of Minnesota's adults feel that lack of money keeps people from getting doctors' care or hospital treatment when they need it. . . . Whatever the reasons, the opinions are important insofar as they shed light on the prevalent attitude among Minnesotans in favor of a government tax-supported national health insurance program."

"Only One-third Aware"

An interesting sidelight in this survey was the fact that only about "one-third of the persons interviewed were aware of the American Medical association's opposition to the kind of national health insurance advocated by President Truman and Security Administrator Oscar Ewing."

Three months later, Poll directors evidently were aware of a change in Minnesotans' thinking about medical care and the payment of medical and hospital bills. The survey was repeated, with people again given their choice between federal and private health insurance.

It was found that 48 per cent of the adult population preferred a private health plan; 28 per cent still favored government control.

"These are among the answers of people who would rather have private health insurance," stated the poll summary:

"'I'm against the government setup on medicine'; 'I believe in private industry'; 'I'd rather do my own deciding on doctors'; 'we have private insurance now and we're satisfied with it'; 'we'd get better service'; 'the federal plan would involve too much regimentation'; 'a private physician out for hire would give patients better care'; 'the federal plan would eventually mean less medical advancement because it would take initiative away from the doctors'; 'it would put too many insurance companies out of business'."

Change of Mind

The most recent survey made by the Minnesota Poll was published August 10. This time people were asked if they would like to see a program of health insurance, similar to that in England, adopted in the United States.

Here are the heartening results:

	All	City	Town	Farm
Yes	29%	31%	22%	27%
No	*53*	*53*	*55*	*53*
Qualified	5	5	6	2
No opinion	13	11	17	18

British Company Fights Socialization

Great Britain's biggest sugar company, is providing an example of persistence and strategy that is an innate criticism of the British medical profession, which with the health and well-being of all England at stake, still yielded to government control with scarcely a struggle.

Tate and Lyle, preparing to defend to the last

cube its right to operate as a private business, according to *Time* magazine, had "On the 2,000,000 cartons of sugar it sells daily . . . printed: 'Keep S Out of State'; 'Tate, Not State'; 'Untouched by Hand—Hands Off Sugar.'"

AMA COUNTS HEALTH POLICY HOLDERS

The Survey Committee of the AMA Council on Medical Service has just completed a study of the number of persons covered by the various forms of voluntary accident and health protection in the United States (as of December 31, 1948).

The findings show that 60,995,000 persons have hospital insurance; 34,060,000, surgical; and 12,895,000, medical.

Blue Cross plans and plans sponsored by medical societies head the list, accounting for 31,246,000 of the individuals covered by hospital insurance, 10,608,000 of those cushioned against surgical expenses, and 5,712,000 of the persons whose budgets are insulated with medical insurance.

"It will be noted that over 93 per cent of the hospital expense coverage and virtually all of the surgical and medical expense coverage effected through these organizations was added during the past ten years."

So reads the Committee report, entitled "A Survey of Accident and Health Coverage in the United States."

SEVENTEEN CONGRESSMEN TO STUDY HEALTH PLANS

Serenely indifferent to official and unofficial protests about the high cost of transporting congressmen, seventeen members of the House Interstate and Foreign Commerce Committee spent September in Europe, looking over the various forms of nationalized medicine and considering civil aviation and petroleum problems.

The reported itinerary was: five days in the British Isles, three in Sweden, a day in Frankfurt, a day in Geneva and two days in both Rome and Paris.

Meanwhile at home, the public, apprised that it cost $25,000 in tax money to fly a group of senators in a military transport from Cairo to Tokyo, was taking a dim view of most congressional and other tax-supported travel programs.

BROOKINGS INSTITUTION MAKING SECOND SURVEY

The Brookings Institution, impartial fact-finding group, has begun its second survey of medical and hospital care in the United States.

The Brookings prospectus of the study states, in part:

"If we are to have a sound national health program, the first requirement is to ascertain the facts as to the state of medical service in the United States today. For a comprehensive picture of the availability of medical care in the United States, both private and public organizations should be covered. These would include medical services provided by industry, trade unions, medical societies, philanthropic and fraternal organizations, national health associations, group health and other voluntary prepayment plans, state and federal medical aid programs, including the veterans and the armed forces, and industrial and commercial insurance."

The findings are expected to extend into two volumes: "The first part of the study would be a comprehensive, descriptive and statistical report designed to make available reliable data on the extent of medical care and the existing and potential provisions for meeting the cost through insurance or prepayment plans, and, in the case of those who cannot pay, through public services or private philanthropy. The second volume, based upon the facts assembled in Volume I, would be an evaluation of the numerous plans now in operation and those proposed. It would deal with the issues of public and private policy and indicate the means by which adequate medical care can best be provided."

The last survey on medical care that the Brookings Institution made was published in April, 1948, entitled "The Issue of Compulsory Health Insurance."

In the preface, the Institution pointed out that the survey had been made in response to an invitation by Senator H. Alexander Smith.

"The request was made in May, 1947, and if the results were to be of service to the Committee, they had to be available early in 1948. Limitations of time and resources necessarily restricted somewhat the scope of the analysis and the amount of original research."

This time, the Brookings Institution is evidently going to make a thorough probe of the situation. Its conclusions and the facts it discovers should be invaluable to everyone interested in increasingly better medical care for the American people.

GOVERNMENT PLANS BRITISHERS' LIVES

Socialism in England has become like a dominant wife who claims her husband's pay envelope and returns to him only money enough for carfare and a haircut. E. T. Leech, editor of the Pittsburgh *Press,* puts it this way:

"What happens to the individual is that the government spends a large part of his wages on what it thinks is good for him—and which the politicians refer to as 'free benefits'—and lets him spend the balance."

And still there are those in the United States who do not recognize compulsory health insurance as the important and opening wedge in a scheme to convert the entire economy of the country.

Minnesota Academy of Medicine

Meeting of April 9, 1949

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, April 13, 1949. Dinner was served at 7:00 o'clock and the meeting was called to order by the President, Dr. J. A. Lepak, at 8:20 p.m.

There were forty-one members and two guests present.

Minutes of the March meeting were read and approved.

Upon ballot, the following were elected as candidates for membership in the Academy:

John Culligan, M.D. .....Saint Paul
John Briggs, M.D. .....Saint Paul
Robert Priest, M.D. .....Minneapolis
Roy E. Swanson, M.D. .....Minneapolis

The scientific program followed.

TRANSVERSE COLOSTOMY VERSUS CECOSTOMY FOR ACUTELY OBSTRUCTING LESIONS IN THE LEFT HALF OF THE COLON

CHARLES E. REA, M.D., W. W. von AMERONGEN, M.D., E. W. SICKLES, M.D., and M. WINDMILLER, M.D.
Saint Paul, Minnesota

The purpose of this paper is to compare the mortality of transverse colostomy with that of cecostomy for acutely obstructing lesions in the left half of the colon. In this study, the statistics from four of the larger hospitals in St. Paul, Minnesota, from 1938 to 1948, were used.

Every surgeon agrees that acute obstruction of the large bowel is a surgical emergency. For obstructions in the left half of the colon, one may do an inguinal colostomy (if the lesion is below the rectosigmoid), a transverse colostomy, or a cecostomy. For acute obstructions in the right half of the colon, one may do an appendectomy, a cecostomy or a double-barreled ileostomy, threading a catheter through the ileocecal valve into the cecum. If the patient is not acutely obstructed, one may decompress the bowel by successful intubation with a Miller-Abbott tube.

For acute obstructions of the right half of the colon, most surgeons would perform a cecostomy. For similar lesions in the left half of the colon, most surgeons would do a transverse colostomy, but some would prefer to do a cecostomy. One of us (C.E.R.) cannot remember a cecostomy ever being performed in cases of acute obstruction of the large bowel at the University of Minnesota Hospitals over an eighteen-year period. At that institution, a transverse colostomy is preferred for acute obstruction of the left half of the colon and a double-barreled enterostomy, threading a catheter through the ileocecal valve into the cecum for acute obstructions of the right half of the colon. It should be said that the mortality at that clinic for acute and chronic obstructions of the large bowel is one of the lowest reported in the literature.

However, many excellent surgeons in this area prefer a cecostomy in the therapy of acute obstruction in the left half of the colon. The late Dr. A. R. Colvin, who for many years was Chief of the Surgical Staff at Ancker Hospital, Saint Paul, Minnesota, did only a cecostomy to decompress obstructive lesions of the colon. Interestingly enough, during his whole surgical career, he never did a Mikulicz obstructive resection; he performed a cecostomy to decompress the bowel and then later did a resection of the lesion and an end-to-end anastomosis of the colon if possible.

Cecostomy

Between 1936 and 1943 numerous papers appeared, principally by Allen, Graham, McNealy and Rankin, extolling the value of cecostomy in the treatment of carcinoma of the colon and rectum.

Rankin found it of value as a complementary procedure at the time of resection for obstructive carcinoma of the colon, but pointed out that its use in the treatment of acute obstructions was not without danger. Graham reported thirty-three acute obstructions of the colon for which cecostomy was done, with only two deaths, and Allen used cecostomy in the treatment of 250 cases of malignancies of the colon, with only eleven deaths which could be attributed to cecostomy.

In 1942 Wangensteen deplored the high mortality following cecostomy for acute malignant obstructions of the colon, which approached 50 per cent in his clinic. He advised transverse colostomy, or ileostomy and threading of a catheter through the ileocecal valve as a substitute. Coller and Ransom in 1944, reviewing 571 cases of carcinoma of the rectum, reported seven cases of cecostomy with five deaths, a mortality of 71 per cent. In all fairness it must be said that these cases were done for high grade obstructions in far advanced cases.

In 1945, Heyd, reporting the treatment of thirty cases of carcinoma of the distal colon, stated that cecostomy

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TABLE I. MORTALITY FOLLOWING CECOSTOMY

			Cases	Deaths	Mort. %
Rankin	1936	All types of lesions	13	0	0.0
Rankin	1939	Complementary Operation	42	5	11.9
		Preliminary for Acute Obstruction	16	3	19.9
		Operable	8	0	
		Inoperable	8	3	
Graham	1939	Acute Obstruction	33	2	6.0
Allen	1941	Malignant Lesions	250	32	12.9
Wangensteen	1942	Malignant Obstruction	—	–	50.0
Collor	1944	Malignant Obstructive Lesions	7	5	71.4

was seldom a satisfactory method of decompression since it relieved only the gaseous distention and did not deflect the fecal current. He advocated the use of the Devine type of colostomy which completely defunctionalizes the distal colon and renders subsequent resection an easier and safer procedure.

The mortality for cecostomy reported by these authors will be found in Table I.

Several methods of doing a cecostomy have been described in the literature. The chief objection to most of these operations is that it is impossible to do them aseptically. Placing sutures in the distended cecum is impossible to do without leaving holes in the wall with resulting leakage of intestinal contents. Placing a catheter into the cecum after decompression with a suction trochar is synonymous with peritoneal contamination unless twelve to twenty-four hours have elapsed to allow the serosa of the cecum to become adherent to the peritoneum. An acutely distended cecum is often difficult to deliver. Wolfer, Beaton and Anson found the cecum to be mobile in only 11.2 per cent of 125 adult anatomical specimens. Thus it is rarely possible to deliver an entire loop of cecum through the incision; usually only a portion of the anterior wall of the cecum is deliverable above the level of the anterior abdominal wall so that later it will not retract below the skin level.

McNealy and Lichtenstein in 1937 described a simple technique aimed at obviating these dangers. Through a muscle-splitting incision the cecum is partially delivered, and two curved clamps applied to the cecal wall and left in place. No suturing is attempted and the bowel is not opened for at least twelve hours following operation. Howser presented eighteen cases using this technique in which no evidence of peritonitis developed.

Transverse Colostomy

Dennis in 1944 reported thirty-eight patients with acute obstruction of the colon treated by transverse colostomy, with three deaths, a mortality of 7.9 per cent. Perforation had occurred in two of these patients prior to operation and one died postoperatively from duodenal hemorrhage. Fallis in 1946 described sixty-two cases of transverse colostomy for acute obstruction, with only two deaths, one from pulmonary embolism the third day and one from uremia on the eighth day.

The technique of transverse colostomy involves a high transverse incision through the right rectus muscle, through which a loop of transverse colon is gently drawn and fixed by a glass rod underneath the bowel.

TABLE II. OVER-ALL MORTALITY

	Cases	Living	Dead	Mort. %
Cecostomy	81	52	29	36
Transverse Colostomy	35	29	6	18

The bowel is needled after a few hours and cut across after a day or two. In this way there is little chance of contaminating the peritoneum and the fecal stream is diverted. Generally speaking, it is the safest operation for decompressing the obstructed large bowel due to lesions in the distal half of the colon.

Cecostomy Versus Transverse Colostomy

There have been but few reports in which the results of cecostomy versus transverse colostomy for acute obstructions in the left half of the colon have been studied. An interesting series is that from the Cook County Hospital, reported by Hendricks and Griffin. W. S. Dorimer, Jr., in a ten-year study of 200 cases, found that up until 1944, a total of 135 consecutive cases of emergency colonic decompressions were done with a mortality rate of 44.5 per cent. In 1944 they began to employ transverse colostomies whenever possible. In 1945 there was a total of forty-nine cases of colonic obstruction with a total mortality of 20.5 per cent. In thirty-nine of these patients carcinoma was present. In the thirty-nine patients, twenty-four cecostomies were done with a mortality of 29 per cent, fifteen transverse colostomies with a mortality of 6.6 per cent, and ten Mikulicz procedures with a mortality of 20 per cent. From 1940 to 1945, inclusive, forty-seven transverse colostomies were performed with a 21 per cent mortality, and 142 cecostomies with a mortality of 40.5 per cent. They were thus able to lower their mortality from 44.6 to 20.5 per cent, apparently by the use of a transverse colostomy. However, the employment of transverse colostomy was only one of the factors which affected the mortality rate so markedly. Other important factors were early differential diagnosis of large from small bowel obstruction and surgical decompression without delay when conservative methods were ineffectual. The mortality rate immediately dropped from 40.5 per cent to 20.5 per cent within one year. This was due to strict attention to the above factors and not due to any operative procedure by itself, for in 1946 their mortality for twenty-one cases of emergency decompression was 23.3 per cent; twelve cases of transverse colostomy and nine cases of cecostomy gave the same mortality rate.

Analysis of This Series

As mentioned above all the cases of cecostomy and transverse colostomy recorded at Ancker Hospital, Bethesda Hospital, Miller Hospital and St. Joseph's Hospital, Saint Paul, Minnesota, for the years 1938 to 1948, inclusive, were studied in this series.

The over-all mortality in a total of 116 cases was almost twice as great for cecostomy as compared to that for transverse colostomy (Table II). These figures mean little, however, unless the type of case is analyzed.

1. *Lesions in the Proximal Half of the Colon Treated by Cecostomy.*—These cases are classified as to whether

TABLE IV. COMPARISON OF CECOSTOMY AND TRANSVERSE COLOSTOMY IN LESIONS OF DISTAL HALF OF COLON

Distal Half	St. Joseph's						Bethesda						Ancker						Miller						Summary					
	Cecostomy			Transverse Colostomy			Cecostomy			Transverse Colostomy			Cecostomy			Transverse Colostomy			Cecostomy			Transverse Colostomy			Cecostomy			Transverse Colostomy		
	No.	L.	D.	No.	L.	D.	No.	L.	D.	No.	L.	D.	No.	L.	D.	No.	L.	D.	No.	L.	D.	No.	L.	D.	No.	L.	D.	No.	L.	D.
Malignant																														
Obstructive Operable	4	3	1g	2	1	1	0	0	0	1	1	0	11	7	4	4	3a	1	7	6	1d	4	3	1f	100%	73%	27%	100%	74%	27%
Inoperable	7	2	5h	0	0	0	1	0	1i	2	2k	0	10	3	7	2	2b	0	6	4	2	4	4	0	22	16	6	11	8	3
Non-obstructive Operable	2	2	0	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	25	37%	62%	100%	100%	
Inoperable	1	1	0	2	2	0	2	2j	0	1	0	1l	0	0	0	0	0	0	1	1	0	2	2	0	4	9	16	8	8	0
																										100%			100%	
																									4	4	0	2	2	0
																										100%			80%	20%
																									4	4	0	5	4	1
Nonmalignant																														
Obstructive Operable	1	1	0	2	1	1	1	1	0	0	0	0	0	0	0	1	0	1c	0	0	0	2	2	0	100%	100%			60%	40%
Inoperable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	5	3	2
Non-obstructive Operable	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inoperable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		100%	
																												1	1	0
																												0	0	0

a. Died 98 days later.
b. Died 54 and 84 days later.
c. Died 30 days later.
d. Pul. embolism 6 days.
e. 1 pul. embolism.
1 peritonitis.
f. Perf. cecum time of operation
g. Paralytic ileus.
h. 2 had perf. cecum time of operation.
i. Cardiac failure.
j. 1 living 4 months later.
k. Discharged 28 days later.
Discharged 42 days later.
l. Overhydrated.

he lesion in the proximal half of the bowel was nalignant or nonmalignant, operable or inoperable, obtructing or nonobstructing. The results are tabulated in Table III. While the series is small, the mortality for he malignant obstructing but operable lesions in the proximal half of the colon treated by cecostomy was over 40 per cent (three deaths in seven patients).

2. *Comparison of Cecostomy and Transverse Colostomy in Lesions of Distal Half of Colon.*—The results of this study are tabulated in Table IV.

It is interesting that the mortalities for cecostomy and transverse colostomy in malignant, operable, obstructing lesions in the distal half of the colon were the same (27 per cent).

It should be mentioned that the above-mentioned cases treated by cecostomy at Miller and St. Joseph's Hospital were done by one individual surgeon at each hospital. However for all malignant lesions in the distal half of the colon, the mortality for cecostomy was 40 per cent (twenty-two deaths in fifty-five cases) as compared to 15.4 per cent (four deaths in twenty-six cases) for transverse colostomy.

3. *Cecostomy and Transverse Colostomy Complementary to Other Operations.*—These cases are recorded in Tables V, VI, and VII. They are self-explanatory and are included only for completeness.

TABLE III. LESIONS IN THE PROXIMAL HALF OF THE COLON TREATED BY CECOSTOMY

Proximal Half	Ancker			Miller			St. Joseph's			Bethesda			Total		
Malignant	No.	L.	D.	No.	L.	D.	No.	L.	D.	No.	L.	D.	No.	L.	D.
Obstructive															
Operable	4	3	1	1	0	1*	2	1	1†	0	0	0	7	4	3
Inoperable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-obstructive															
Operable	0	0	0	1	1	0	0	0	0	1	1	0	2	2	0
Inoperable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total													9	6 (33%)	3
Nonmalignant															
Obstructive															
Operable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Inoperable	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
Non-obstructive															
Operable	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0
Inoperable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total													2	1 (50%)	1

*Evisceration, died in 7 days. †Died of bronchopneumonia.

TABLE V. TRANSVERSE COLOSTOMY COMPLEMENTARY TO OTHER OPERATIONS

Other Operations	Living	Dead
Resection of carinoma of sigmoid	2	
Prostatectomy for carinoma of prostate with rectal extension	1	

TABLE VI. CECOSTOMY COMPLEMENTARY TO OTHER OPERATIONS

Other Operations	Living	Dead
Resection sigmoid; hysterectomy for fibroids	1	
Cecostomy and resection trans. colon for Ca. Tr. colon	1	
Cecostomy and resection descending colon for Ca des. colon		1*
Cecostomy and resection sigmoid colon for Ca. sigmoid colon	4	
Cecostomy and appendectomy (Ca. ascending colon)	1	
Cecostomy, appendectomy and hysterectomy	1	
Total	9	1

*Peritonitis at time of operation.

TABLE VII. CECOSTOMY FOR OTHER CAUSES OF OBSTRUCTION

Other Causes	Living	Dead
Paralytic ileus		1
Paralytic ileus, peritonitis following appendectomy	1	
Carcinoma of prostate with extension to bladder and rectum		1
Partial obstructed sigmoid, etiology unknown	1	
Large bowel obstruction, cause unknown		1

Conclusion

For the average surgeon, a transverse colostomy is preferable to cecostomy for obstructing lesions in the distal half of the colon. It is not only easier to deliver the transverse colon but the operation can also be done more aseptically. In this study, the mortality of cecostomy was the same as that for transverse colostomy (27 per cent) in obstructing, operable, malignant lesions of the left half of the colon. The reason was that most of these cecostomies were done by a few highly trained surgeons. Even then, a mortality of 27 per cent leaves much to be desired. Since the over-all mortality for cecostomy was twice that for transverse colostomy in this series, transverse colostomy would seem to be the operation of choice for obstructing lesions in the distal half of the colon.

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Discussion

Dr. Logan Leven, Saint Paul: I enjoyed Dr. Rea's discussion of the value of cecostomy in the management of lesions of the left side of the colon. He stressed the point that cecostomy in some surgeons' hands carries a very low mortality. I believe that the operation of transverse colostomy is simpler than cecostomy, and in the same surgeon's hands would carry a lower mortality as a rule than would cecostomy. Of greater importance, however, is the question of the efficacy of the operation itself. Cecostomy as a rule results in merely a fecal fistula and does not divert the entire fecal stream as can be done by transverse colostomy. Because the operation is simpler, the mortality generally lower, and the operation more effective, I prefer transverse colostomy to cecostomy in the management of obstructive lesions of the left side of the colon.

Dr. E. A. Regnier, Minneapolis: I agree with what was said about the two types of decompression of the bowel. I think one is hard put with a lesion in the right half of the colon to do anything but a cecostomy for decompression. You don't always have a choice, but sometimes you can do an ileostomy. Many times I have used the Wetzel type of ileostomy with a long tube with multiple perforations. The tube is threaded down through the ileocecal valve. It prevents distention of the right colon and prevents rupture of the colon. Many of these cases in forty-eight to seventy-two hours will spontaneously open and decompress themselves. I believe that ileostomy is a better and safer procedure than cecostomy for decompression of the right colon and that a transverse colostomy is far superior to cecostomy for obstructive lesions of the left colon.

Dr. Rea (in closing): I am grateful for this discussion. What we are particularly interested in is this: given an acutely obstructing lesion in the left half of the colon, is it better to do a transverse colostomy or a cecostomy? Most of the older surgeons would seem to have a preference for cecostomy. I might say that while a Fellow in surgery at the University of Minnesota Hospital, I never saw a cecostomy performed, and yet the results of treatment of acute obstruction of the large bowel at that institution are equal if not superior to those reported elsewhere. One of my first patients on the surgical service at Ancker Hospital, Saint Paul, had an acute obstruction of the large bowel. The late Dr. Alexander Colvin saw the patient with me and asked what I planned to do. I replied "A transverse colostomy." He asked, "Why not a cecostomy?" I told him that I had never done one. He replied, in turn, that he had never done a transverse colostomy but that he always did a cecostomy in such cases. (He let me do a transverse colostomy.)

In general, a transverse colostomy is a simpler and safer operation to perform than a cecostomy in cases of acute obstruction of the large bowel. In expert hands, the corrected mortality of transverse colostomy is almost negligible. However, it is only fair to say that, in expert hands, the mortality from cecostomy in comparable cases is equally as low. With what we know now of fluid balance, blood and electrolytic replacement, antibiotics, the mortality of any of these operations is not what it was one or two decades ago.

PERIODIC PARALYSIS

GORDON R. KAMMAN, M.D.
Saint Paul, Minnesota

Periodic paralysis is recognized clinically by the development of intermittent attacks of flaccid paralysis of the skeletal muscles of the extremities, loss of the deep tendon reflexes, and loss of electrical excitability both to faradic and galvanic currents. During an attack of periodic paralysis the mental condition of the patient remains clear.

Etiology.—The condition is probably functional in nature. No gross changes have been consistently found in the spinal cord, peripheral nerves, or the involved muscles. The condition may be familial but it is not necessarily so, and many sporadic cases have been reported. Apparently the condition is the result of various etiologic factors. Some patients suffer attacks of paraplegia following bouts of malaria; in some cases there is enlargement of the thyroid gland, and some patients under treatment for Addison's disease have attacks of periodic paralysis following the assimilation of excessive amounts of desoxycorticosterone acetate.

Periodic paralysis is known by a variety of other names i.e. nocturnal paralysis, night palsy, paroxysmal myoplegia, paraplegia spinalis intermittens nervosa, et cetera.

Incidence.—The disease is considered rare but it is probably more common than is ordinarily believed. Up until 1941, 400 cases were reported in the literature with thirty-five deaths. Males outnumber females in the proportion of about three to one.

Age.—The disease usually develops in the first or second decade of life. It frequently comes on at puberty or during adolescence, and during this period the symptoms are usually more severe than they are later in

Much of the material in this article was obtained from an excellent monograph on "Periodic Paralysis" published by John H. Talbott in *Medicine*, 20:85-143, (Feb.) 1941.

ife. Later in life there is a tendency for the attacks o diminish in frequency and severity, and sometimes hey disappear entirely during adult life.

Inciting Factors.—Various forms of trauma, prolonged lebilitating diseases and fevers, and a great variety of ther incidents have been cited as inciting factors. Frequently an attack follows the ingestion of a high carbohydrate meal. The attacks frequently develop in the niddle of the night, and they are thought in this case o be the result of the ingestion of a high carbohydrate neal during the preceding evening. The glucose tolerance curve is normal in most of these patients.

An attack may be precipitated by the administration of adrenalin. This is probably due to the raising of the blood sugar and the depressing of the serum potassium resulting from the injection of the adrenalin. However, adrenalin is not as consistent in producing an attack as is a high carbohydrate meal.

Sometimes insulin with glucose will produce an attack, much as prolonged hyperglycemia. This seems paradoxical, but is presumably due to the stimulation of the secretion of adrenalin resulting from the parenteral administration of insulin.

Paralysis.—The paralysis begins peripherally in the extremities, usually the legs, and progresses centrally. In a few patients the paralysis may begin in the hips and shoulders and spread peripherally. It may be partial or complete, localized or generalized, involve either the upper or lower extremities, or it may be unilateral. The paralysis is flaccid, and it spares the muscles of the face, mouth, and throat. The accessory muscles of respiration and the sphincters also are spared. However, some fatal cases have been reported in which the muscles of respiration and deglutition were involved.

There also is an abortive type of the paralysis known as "crises frustes." These abortive attacks vary from stiffness and weakness in the extremities to paralysis with reduced deep reflexes. In some patients these abortive attacks may last for as long as a week without paralysis. As said before, there is never any mental clouding. Some reports on patients who have died indicate that the patients remain mentally clear until the end.

In some cases there may be enlargement of the extremities during paralysis. In one patient the circumference of the thigh increased 8 centimeters and of the forearms 2 centimeters during the period of paralysis, and returned to normal after the paralysis had passed.

The changes in electric excitability are different from those found in curare. In periodic paralysis the reaction to both galvanic and faradic stimulation is absent. In curare paralysis, only the response to faradic stimulation is lost, i.e., galvanic stimulation which stimulates the muscle fibers themselves results in a muscular contraction. This indicates that the dysfunction in periodic paralysis is not at the myoneural junction.

Recovery from the paralysis occurs anatomically in the reverse order to that in which the paralysis developed.

Frequency and Duration of Attacks.—There is extreme variability in the frequency and duration of attacks, all the way from one to two in a lifetime to several a week. The attacks last for six or eight hours and sometimes for as long as two or three days. In a case reported by Machalachlan in 1932 the paralysis lasted for eight days. This is the longest case on record.

Laboratory Findings.—There is a slight leukocytosis with relative increase in lymphocytes. There is also a transient albuminuria and oliguria.

The basal metabolic rate may be increased in patients suffering from thyrotoxicosis. One case was reported in which the basal metabolic rate increased from plus 17 to plus 59 during the period of paralysis. This again sounds paradoxical because one would expect a decrease in oxygen consumption when the muscles are paralyzed. The probable explanation is that there is a transient disturbance of the intermediary metabolism of carbohydrates during the paralysis, and this demands an increased oxygen intake.

The electrocardiogram shows striking and unusual changes all the way from normal to decreased amplitude of the T waves, prolongation of P-R, Q-R-S, and Q-T intervals. Left axis deviation was observed in many cases, and one case of left axis deviation was observed in a child seven years of age.

Blood Chemistry.—The most striking change in the blood chemistry is a decrease in the serum potassium and serum phosphates during an attack. These changes are believed to be intimately concerned with the pathogenesis of the attacks. The potassium does not leave the body but probably migrates to the liver along with glycogen. In other words, the liver is enriched with glycogen as well as with potassium. Such migration is consistent with the empiric observation that attacks of paralysis follow high carbohydrate meals.

It is important to note that a reduction in serum potassium will not always result in paralysis, but paralysis is always accompanied by reduction in serum potassium. Furthermore, reduction in potassium will not produce paralysis in all people. The individual must be susceptible to paralysis in order to suffer this condition following a reduction in serum potassium. Moreover, 1 gram of KCl intravenously will result in recovery from the paralysis in a few minutes. This is not a local effect because 0.1 gram of KCl injected into the brachial artery will not relieve the paralysis if the venous return is obstructed for a period of eight minutes. However, upon release of the venous obstruction, recovery from the paralysis is seen. Therefore, the curative action of potassium either is central, or some substance is formed in the viscera by the action of potassium and is carried to the muscles to restore power.

Treatment.—General hygienic measures, avoidance of high carbohydrate intake, and the daily administration of 10 to 15 grams of KCl a day are the best known methods of treatment.

Case Report

G. R., male, single, aged twenty, was referred on February 22, 1949, by Dr. R. M. Kilgard of Watertown, South Dakota. The family and past histories were noncontributory to the patient's present illness. During the Thanksgiving vacation of 1948, Mr. R. was riding in a car en route to his home from college. About four o'clock in the afternoon he fell asleep. When he awakened, his legs seemed to remain "asleep," i.e., he was unable to use them. When he tried to walk, he staggered and fell. There were no sensory disturbances. The paralysis lasted for about twenty-four hours and then gradually left and Mr. R. made a complete recovery. His local physician examined him shortly after the attack and was unable to demonstrate any muscular weakness.

On February 10, 1949, Mr. R. suffered a second attack. He again had been riding in a car and had fallen asleep. When he tried to get out of the car, he fell to the ground and was unable to walk. He was carried to his bed, and the following day the muscle strength gradually returned in his lower extremities.

There were no symptoms suggestive of multiple sclerosis, there was no impairment of the sensorium, and no other disturbances in consciousness.

The neurological examination was negative throughout for organic signs.

The basal metabolic rate was —3.

The spinal fluid was clear and under normal pressure; it contained 3 cells, 50 mg. protein, and had a negative Wassermann test and negative colloidal gold curve.

The glucose tolerance test showed the following:

Fasting blood sugar	102 mg.	Urine negative
½ hour	148 mg.	Urine negative
1 hour	150 mg.	Urine negative
2 hours	112 mg.	Urine negative
3 hours	82 mg.	Urine negative
4 hours	92 mg.	Urine negative
5 hours	93 mg.	Urine negative

Serum potassium 26. mg.
Serum phosphorus 3.9

Mr. R. was placed on 15 grains of potassium chloride three times a day and instructed to increase the dose gradually to 30 grains three times a day. He returned home and has not had any difficulty since.

Discussion

Dr. E. M. Hammes, Saint Paul: Dr. Kamman has presented a very interesting syndrome, namely, periodic paralysis. There are two main groups of diffuse paralysis of the extremities. In the one group, we have acute anterior poliomyelitis, postdiphtheric neuritis, other forms of toxic neuritis, multiple sclerosis and hysteria. All of these diseases have a normal serum potassium. The second group comprises periodic paralysis, also similar syndromes associated with acidosis nephritis, overtreatment for Addison's disease and occasionally thyrotoxicosis. The mortality rate in periodic paralysis is about 10 per cent. While determining the diagnosis in some of these rather puzzling disorders, it might be a safe procedure to administer to these patients potassium in some form. If it is not due to potassium deficiency, no harm is done; if it is, the early administration of potassium will greatly lessen the mortality rate.

Dr. Kamman's case had a serum potassium of 36, as I recall. I presume this was due to the fact that the patient was practically over the attack.

There are two disorders which respond miraculously to a single therapeutic dose and the result confirms the diagnosis—namely, prostigmine for myasthemia gravis, and potassium for periodic paralysis. When the effect of the drug subsides, the symptoms usually recur.

Dr. Vernon L. Hart, Minneapolis: I would like to ask a question. Do any of the paralyses remain permanent with subsequent development of deformity?

Dr. C. J. Watson, University of Minnesota: I think we have all become increasingly aware of the importance of hypopotassemia. Dr. Hammes referred to diabetic acidosis. We have seen persons in diabetic coma with rather characteristic breathing who are promptly benefited by the administration of potassium. I have seen cases in the past where the ketosis was taken care of, yet the patient died. Quite a few have since been shown to be due to lowering of serum potassium. Darrow showed that the cause of death in infantile diarrhea is often a hypopotassemia.

I think that it is difficult to understand just how the potassium is lowered in these cases such as Dr. Kamman has described so well. It seems evident that the potassium and glucose mechanisms are disturbed. There may be an enzyme lacking in the liver which prevents too rapid utilization of potassium in glucose metabolism. Insofar as uremia is concerned, a situation can arise where one has to be very careful because there are cases of uremia with hypopotassemia, and others with hyperpotassemia may die if given more potassium. I do think that within the not too distant future the use of the flame photometer will become more and more routine in hospital laboratories, for determinations of sodium and potassium. It is only in the last few years that we have become aware of the great importance of the intravenous administration of KCl.

Dr. Kamman (in closing): In answer to the question as to whether these paralyses ever persist long enough to produce permanent contracture (Volkman contracture), I would say no. The paralysis does not last long enough to produce such a contracture. When recovery from paralysis takes place, it is complete, and it is my understanding that it takes more than just a few hours of muscular paralysis to result in a contracture. One of the most fascinating things in periodic paralysis is the completeness with which a person can be paralyzed, and the prompt and complete recovery which can occur. One case of quadraplegia was described in which a patient was able only to lift his head, and the clinical picture was like that of a person with a broken neck with transection of the cord in the high cervical region. He was completely flaccid, and yet he recovered after the intravenous administration of KCl.

The meeting was adjourned.

A. E. Cardle, M.D., *Secretary*

SARCOIDOSIS

(Continued from Page 990)

Summary

The clinical and laboratory findings in seventeen patients with sarcoidosis are reviewed. The clinical diagnosis in each case has been substantiated by histopathologic study of either a section of skin or lymph node. Laboratory studies, including cultures and the inoculations of animals to determine the presence of Mycobacterium tuberculosis, were done on tissue specimens in each case. Material from all seventeen cases gave negative results.

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In Memoriam

LEO S. BURNS

Dr. Leo S. Burns of South Saint Paul died suddenly on September 7, 1949, at the age of forty-eight.

Dr. Burns was born at St. Thomas, Minnesota, October 29, 1901. He attended St. Thomas College in Saint Paul and obtained his medical degree from the University of Minnesota Medical School in 1930. He interned at the University Hospital, Minneapolis.

Dr. Burns served as South Saint Paul school physician from 1937 to 1942 and was a past president of the Dakota County Medical Society. During World War II he was a captain in General Patton's army.

Surviving are his mother, Mary E. Burns of Saint Paul, and two sisters, Mrs. Leo McCue of National City, California, and Mrs. Howard Prairie of Farmington, Minnesota.

HOMER C. COLLINS

Dr. Homer C. Collins of Duluth died July 31, 1949, at the age of ninety.

He was born at Fairport, New York, January 4, 1859. After attending public schools at Rochester, New York, he obtained a B.S. degree from Cornell and studied medicine at Cornell and the College of Physicians and Surgeons in New York, where he obtained his medical degree in 1884.

From 1884 to 1889 he was superintendent of the State hospital in Rochester, Minnesota. After taking postgraduate training at the New York Postgraduate Eye and Ear infirmary, he located in Duluth in 1890—the first eye, ear, nose and throat specialist in the city. In 1941 Dr. Collins celebrated his fifty years of practice in Duluth.

Dr. Collins was a member of the St. Louis County Medical Society, the Minnesota State and American Medical Associations and the American Academy of Ophthalmology.

He is survived by his widow, Gertrude, a son, Homer Jr., and three daughters—Mrs. A. Laird Goodman, Duluth; Mrs. Eric Calman, Madera, California, and Mrs. E. L. Hemenway, Englewood New Jersey.

GEORGE E. MALMGREN

Dr. George E. Malmgren, formerly of Saint Paul, died August 24, 1949, in Los Angeles, following an operation. He was forty-seven years old.

Dr. Malmgren was born in Saint Paul, obtained his medical education at the University of Minnesota, graduating in 1926. He was on the staff of the Mayo Clinic for several years before moving to California, twelve years ago.

NORMAN REUBEN SCHNEIDMAN

Dr. N. R. Schneidman, chief of the pulmonary diseases section at the Veterans Hospital, Minneapolis, died September 6, 1949, at the age of forty-two.

Born in Russia, Dr. Schneidman came to Minneapolis at the age of fourteen and obtained his medical education at the University of Minnesota. After serving an internship at the Minneapolis General Hospital, he practiced at Pipestone and at the White Earth Indian Reservation. He served as a lieutenant in the Navy.

Dr. Schneidman was a member of the Hennepin County Medical Society, the Minnesota State and American Medical Associations, the Minneapolis Society of Internal Medicine, the Trudeau Society, the Beth El Synagogue and B'nai B'rith.

BAXTER A. SMITH

Dr. Baxter A. Smith of Crosby, Minnesota, died in August, 1949. He was born in Harrowsmith, Ontario, February 17, 1876.

Dr. Smith obtained his M.D. degree at Queens College, Kingston, Ontario, in 1905. He practiced at Biwabik from 1906 to 1913. His specialty was industrial surgery.

He was a member of the Upper Mississippi Medical Society, the Minnesota State and American Medical Associations.

CHARLES CARROLL WALKER

Dr. Charles C. Walker, a pioneer Lamberton physician, died at the Redwood Falls rest home on August 13, 1949, at the age of seventy-nine.

He was born May 27, 1870, at Kilbourn Dells, Wisconsin. He received his medical degree from Northwestern University Medical School in 1896 and had practiced medicine at Curry, Raymond, and Lamberton for over fifty years. He retired two years ago.

Dr. Walker was married to Julia Cole who passed away two years ago. He is survived by a son Harold, of Duncan, Oklahoma, and a daughter, Mrs. Katherine Smith, of Denver, Colorado, both foster children.

He was a medical officer in World War I and a member of the American Legion.

THYROID ADENOMATA IN CHILDREN

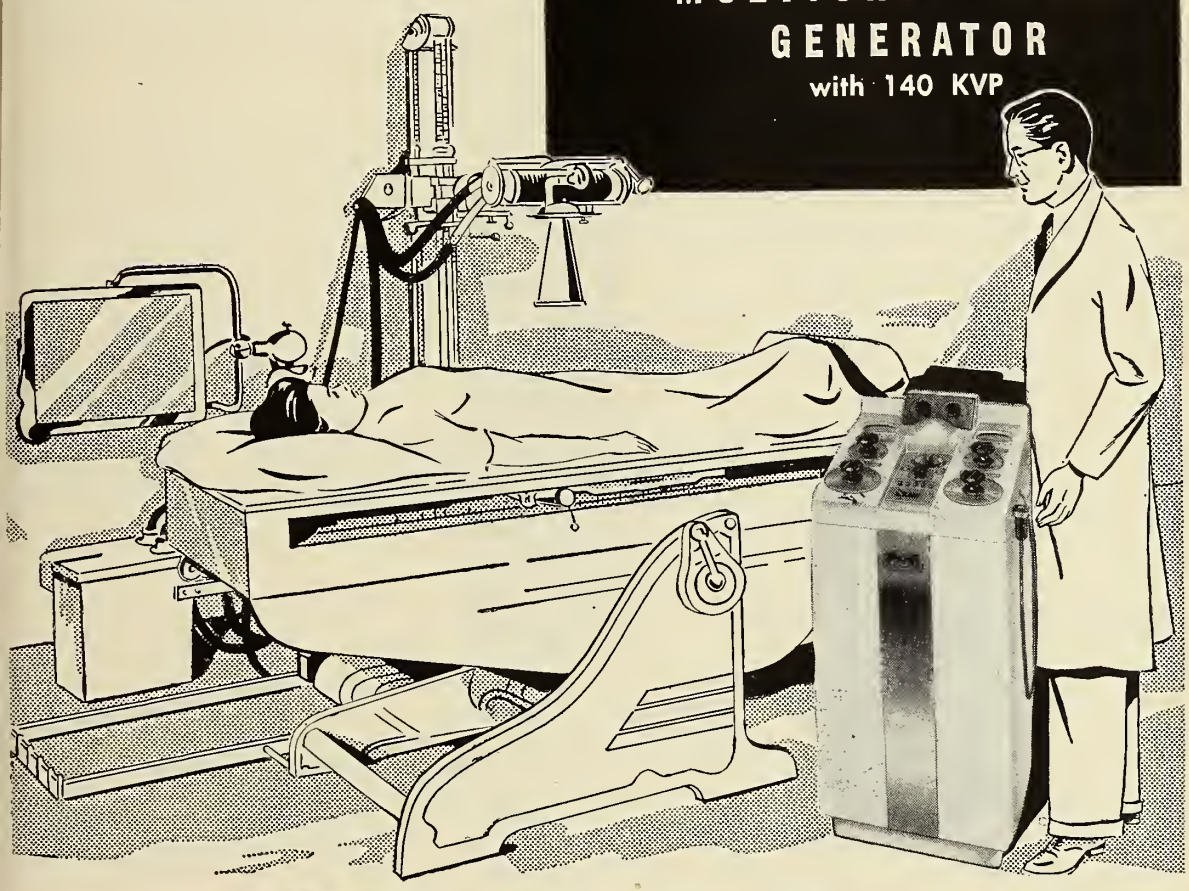
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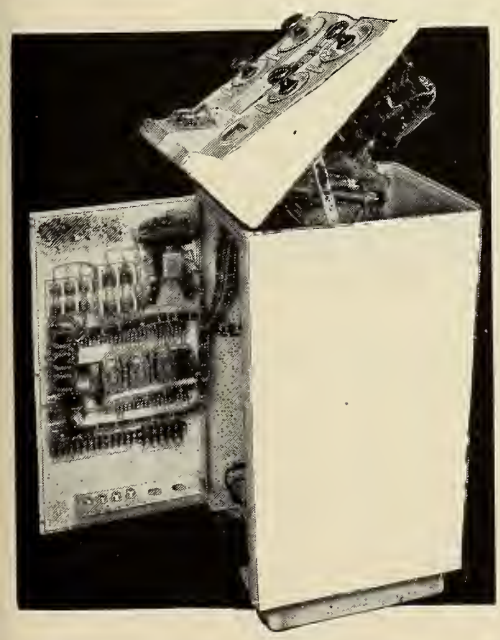
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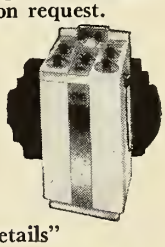


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Reports and Announcements

INTERNATIONAL MEDICAL ASSEMBLY

The thirty-fourth annual assembly of the International Medical Assembly of the Inter-State Postgraduate Medical Association of North America will be held at Philadelphia in the Public Auditorium, October 31 to November 3.

This assembly will hold its scientific sessions in the morning, afternoon and evening for four days, and the sessions will consist of addresses by outstanding professors from the various medical schools of the United States and Canada. The assembly dinner will be held Wednesday evening in the Crystal Ballroom of the Benjamin Franklin Hotel, following which the president of the Assembly, Dr. Evarts A. Graham, will make an address on "Changing Concepts in Surgery." At the dinner the president-elect, Dr. Waltman Walters of the Mayo Clinic, will be presented.

The assembly has rightfully taken its place as one of the outstanding medical meetings of the year. All physicians are invited to attend. The registration fee is $5, and registration may be made at the Hotel Benjamin Franklin on Sunday, October 30, the day preceding the opening of the sessions.

AMERICAN COLLEGE OF CHEST PHYSICIANS POSTGRADUATE COURSE

A postgraduate course in diseases of the chest, sponsored by the Council on Postgraduate Medical Education and the New York State Chapter of the American College of Chest Physicians, will be held at the Hotel New Yorker, New York, November 14 to 18.

The meeting will consist of morning and afternoon sessions, with addresses by specialists in chest diseases and related fields. Registration fee is $50 and application should be made to the American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

VAN METER PRIZE AWARD

The American Goiter Association again offers the Van Meter Prize Award of $300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held in Houston, Texas, March 9, 10 and 11, 1950, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations, should not exceed three thousand words in length, must be presented in English, and a typewritten double-spaced copy in duplicate sent to the Corresponding Secretary, Dr. George C. Shivers, 100 East St. Vrain Street, Colorado Springs, Colorado, not later than January 15, 1950. The committee that will review the manuscripts is composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for presentation of the prize award essay by the author, if it is possible for him to attend. The essay will be published in the annual *Proceedings* of the Association.

UROLOGY AWARD

The American Urological Association offers an annual award of $1,000 (first prize of $500, second prize $300 and third prize $200) for essays on the results of some clinical or laboratory research in urology. Competition shall be limited to urologists who have been in such specific practice for not more than five years and to residents in urology in recognized hospitals.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Statler, Washington, D. C., May 29—June 1, 1950.

For full particulars write the Secretary, Dr. Charles H. de T. Shivers, Boardwalk National Arcade Building, Atlantic City, N. J. Essays must be in his hands before February 20, 1950.

OMAHA MID-WEST CLINICAL SOCIETY

The Omaha Mid-West Clinical Society will hold its seventeenth annual assembly at Hotel Paxton, Omaha, Nebraska, October 24 through 28.

Scientific motion pictures will open the daily programs. Timely subjects have been chosen for round table discussions immediately following luncheons and dinners. Scientific and technical exhibits will be presented.

Further information may be obtained by writing to the executive office, 1031 Medical Arts Building, Omaha, Nebraska.

COUNTY MEDICAL SOCIETY OFFICERS NATIONAL CONFERENCE

The sixth national conference of county medical society officers (the "Grass Roots Conference") will be held at Hotel Statler, Washington, D. C., on December 8. Among the features of the conference will be descriptions of several of the nation's "Outstanding Achievements in Community Medical Leadership." All registrants for the AMA Clinical Session and their wives are invited to attend the conference, which is sponsored by the Board of Trustees of the AMA.

OLMSTED-HOUSTON-FILLMORE-DODGE COUNTIES SOCIETY

A meeting of the Olmsted-Houston-Fillmore-Dodge Counties Medical Society was held in Rochester on September 7. Dr. M. M. Hargraves, Rochester, presented a paper on the differential diagnosis of chronic myelogenous leukemia, and a thirty-minute colored sound motion picture on the use of the Mayo Clinic library

(Continued on Page 1036)



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BRANCHES AT LOS ANGELES AND DALLAS

OLMSTED-HOUSTON-FILLMORE-DODGE COUNTIES SOCIETY

(Continued from Page 1034)

was shown. Dr. H. W. Woltman, Rochester, is president of the four-county society.

ST. LOUIS COUNTY SOCIETY

The principal speaker at a meeting of the St. Louis County Medical Society in Duluth on September 8, was Arthur M. Calvin, Saint Paul, executive director of the Minnesota Medical Service Association and the Minnesota Hospital Service Association. Mr. Calvin discussed "The Cost of Hospital Care in Duluth." Under the leadership of Dr. M. H. Tibbetts, Duluth, president of the society, the members studied a proposed revision of their constitution and by-laws.

WASHINGTON COUNTY SOCIETY

The regular monthly meeting of the Washington County Medical Society, held September 13, was devoted to a consideration of the actions taken by the House of Delegates of the Minnesota State Medical Association at the May session. Much attention was given to the five resolutions that were referred to the county societies. Resolution No. 1 was rejected, but the other four were endorsed.

The society has sponsored the placing of twelve large copies of the picture entitled "The Doctor," by Luke Fildes, in the Lake View Memorial Hospital, the county court house and the large schools of the county. Forty-three smaller pictures will be placed in the rural schools.

CONTINUATION COURSES

Traumatic and Pediatric Surgery

The University of Minnesota announces a continuation course in traumatic and pediatric surgery to be presented at the Center for Continuation Study on November 10, 11, and 12, 1949. The course, which is intended for general physicians, will emphasize the diagnosis and management of surgical conditions occurring in children. Special attention will be paid to the treatment of fractures, especially those occurring during childhood.

Child Psychiatry

A course in child psychiatry will be presented at the Center for Continuation Study on November 28 through December 3, 1949. This continuation course, which is intended for pediatricians and general physicians, will emphasize normal, emotional, intellectual, and social development of infants and children and the emotional and behavior problems seen in infancy, childhood, and adolescence. Dr. Adrian Vander Veer of the Department of Psychiatry, University of Chicago, will participate as a visiting faculty member.

City-wide x-ray surveys can be conducted with relative economy of means and money. Previous experience in cities already surveyed and preliminary studies of other communities indicate that if present facilities are fully utilized and if newly discovered cases are given realistic disposition, the increased case load of tuberculosis will not present a grave problem to the community.—Francis J. Weber, M.D., *Ohio Public Health*, Feb., 1948.

Correspondence

To the Editor:

The study of twins is of great value in providing information concerning the respective importance of hereditary predisposition and environmental influences in disease in man. The results of the use of this method have shown a hereditary predisposition to tuberculosis, diabetes, and tumor formation, and a high, medium or low intelligence quotient.

There is some *a priori* evidence showing an hereditary predisposition for peptic ulcer. Only six cases of the occurrence of peptic ulcer in the one or both of mono- or dizygous twins have been reported in the readily accessible literature. Since twins are born in 1 of 86 births and identical twins in 1 of 344 births and the general incidence of ulcer is from 5 to 10 per cent there should be plenty of material available.

I should like to ask physicians to co-operate in assemblying such material by sending me cases in which (1) one or both twins develop peptic ulcer, (2) the site of the ulcer, (3) the age of onset of ulcer, (4) the type of twins (monovular or diovular), (5) the sex of the twins, (6) the date of birth of the twins, and (7) the number and age of the brothers and sisters and the absence or presence of ulcer in each.

Yours sincerely,

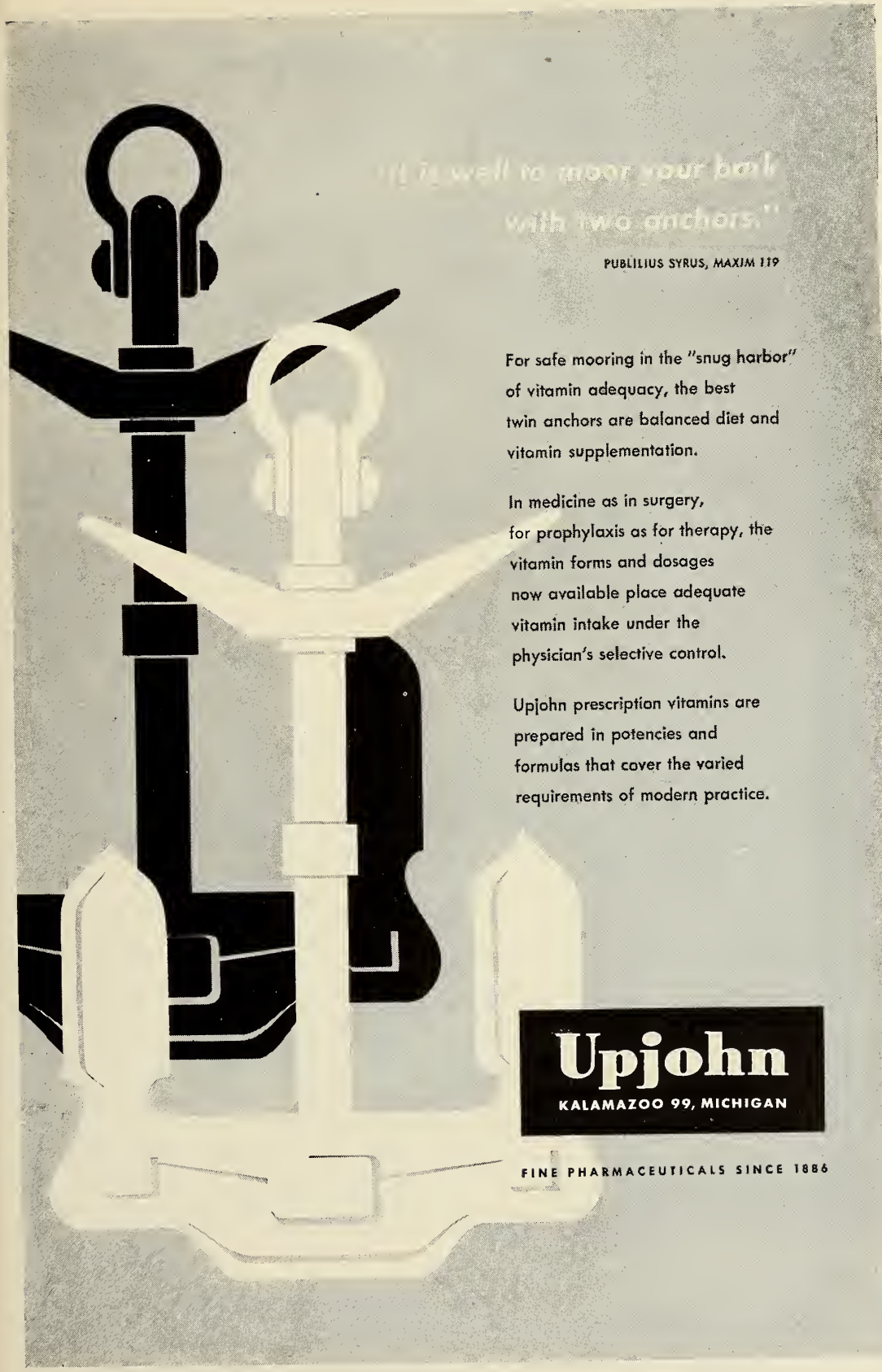
A. C. Ivy, M.D.
Department of Clinical Science
University of Illinois.

1853 West Polk Street,
Chicago 12, Illinois
August 30, 1949

MELORHEOSTOSIS

(Continued from Page 985)

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Mrs. David Halpern

"This year is a critical one and must be one of study," writes Mrs. Leo J. Schaefer, Salina, Kansas, national Auxiliary program chairman, as she presents an outline of program material for state Auxiliaries and their component county Auxiliaries.

"The suggested material is not new," Mrs. Schaefer explains, "but we feel that greater emphasis must be placed on the program given at Auxiliary meetings. A background of information then may be built up to act as a bulwark against any force which may endanger the place of the doctor in our country. A national, state or county program is only as effective as the information each member is able to give when questioned."

"This year let us aim to have each subject presented and discussed as in a study club, group discussion, panel discussion or lecture form. As busy adults, too often we acquire a 'reading knowledge' instead of a speaking knowledge of current affairs. In this period of American thinking, we must develop a speaking knowledge, fortified with authentic information. It is your duty and privilege to interpret and support the ideals of organized medicine."

Program 1949-1950

I. Twelve-point program of the American Medical Association, for the advancement of medicine and public health (1) (4) (6)*
   1. A federal Department of Health
   2. Medical research
   3. Voluntary insurance
   4. Medical care authority with consumer representation
   5. New facilities
   6. Public health
   7. Mental hygiene
   8. Health education
   9. Chronic diseases and the aged
   10. Veterans' medical care
   11. Industrial medicine and accident prevention
   12. Medical education and personnel.

II. The AMA—its history, function, work of the various councils, bureaus and other departments (1) (4)

III. Study legislation—local, state and national, which affects health and medicine.
   1. Truman's compulsory health insurance plan (5)
   2. Oscar R. Ewing's "The Nation's Health—a Ten Year Program" (2)
   3. AMA's answer to compulsory health insurance (1) (4) (5)

IV. Voluntary prepayment medical and hospital care plans (5)
   1. Familiarize yourself with the plan used in your state.

V. State Board of Health (3)
   1. Study services available

VI. Local health department (3)
   1. Study services available in city and county.

VII. School health program (1) (4)

VIII. Rural health problems and their proposed solutions (1) (4) (5)

IX. Nurse recruitment (1) (7)
   1. Methods and information available

X. Radio programs of the AMA presented by the Bureau of Health Education (4)

XI. Hygeia (4)

*Numbers in parenthesis correspond to the following list of sources where material may be obtained to carry out the above program.

(1) National program chairman—Mrs. Leo J. Schaefer, 700 Highland, Salina, Kansas.
(2) U. S. Printing Office, Washington, D. C.
(3) State or county Board of Health departments
(4) Bureau of Health Education of the AMA, 535 North Dearborn street, Chicago 10, Illinois
(5) State or county medical societies
(6) Bulletin of Woman's Auxiliary to the AMA, March, 1949
(7) National League of Nursing Education, 1790 Broadway, New York 19, New York.

HYGEIA CONTEST DEADLINE

Mrs. J. A. Cosgriff

The American Medical Association has announced another *Hygeia* contest, extending from September 1, 1949, to January 31, 1950, with cash awards going to the following Auxiliary groups: Group 1, membership of 1 to 18; group 2, membership of 19 to 35; group 3, membership of 36 to 99; group 4, membership of 100 or more; group 5, State Auxiliaries.

No Auxiliary will be given a cash prize nor special recognition unless it has secured at least 25 subscription credits. For example: if an Auxiliary has 10 members and secures 10 subscription credits, its percentage is 100; but, in order to be eligible for a cash prize, the Auxiliary must have gained a minimum of 25 subscription credits. Auxiliaries with a membership of 25 or more must have a percentage of 100 to be eligible for a cash prize. No county Auxiliary will be given credit for subscriptions taken from members at large or other county auxiliaries that are organized.

Prizes are based on the group quota and the number of subscription credits obtained. The quota is the number of members in the Auxiliary who have paid their Auxiliary membership dues at the close of the previous fiscal year. This arrangement gives the Auxiliary with a small membership an equal chance with the larger ones in its particular group. An Auxiliary, for instance, that has 20 members and secures 20 subscriptions would have reached its quota and have a rating of 100 per cent. Furthermore, if an Auxiliary has only 20 members and secures 80 subscriptions, it would have a rating of 400 per cent and would win over an Auxiliary that has 30 members and secures 90 subscriptions, with a rating of 300 per cent.

A one-year subscription will count as one credit; a two-year subscription as two credits; a three-year subscription, three credits; a six-month subscription, one-half credit. No distinction in credits is made with regard to new or renewal orders. In the event of a tie, the county sending in the largest number of two-year and three-year subscriptions will be awarded the prize.

Each county president has received, or will receive, all the necessary information from the circulation director of *Hygeia*. She should appoint a *Hygeia* chairman and urge her to contact schools, libraries, beauty parlors,

(Continued on Page 1049)

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DEALERS IN DEPENDABLE MERCHANDISE



Of General Interest

The American Medical Association reported in September that the 1949 class of graduating physicians numbered only 5,094—the smallest class in ten years. It was expected, however, that the incoming group of medical freshmen this fall would be the largest on record, about 6,900.

* * *

During the second half of August and early September, Dr. John A. Watkins of Windom conducted the practice of Dr. A. T. Kapsner in Princeton while Dr. Kapsner was on vacation. A graduate of the University of Minnesota Medical School in 1947, Dr. Watkins served his internship at St. Luke's Hospital in Duluth and at Wayne County General Hospital in Detroit.

* * *

"Common Neuropsychiatric Problems Encountered in General Practice" was the title of an address given by Dr. Gordon R. Kamman, Saint Paul, at a meeting of the Cerro Gordo County Medical Society in Mason City, Iowa, on September 13.

* * *

Dr. R. E. Johnson, superintendent and medical director of Sunnyrest Sanatorium in Crookston since October, 1943, resigned his position in August. He announced at the time that he had no immediate plans other than taking a rest for several months. He was replaced in the sanatorium post by Dr. R. R. Hendrickson, formerly of Lake Park.

* * *

An editorial in the Blue Earth *Register* on September 6 stated that the village of Bricelyn had been without a physician for more than a year and that residents of the community were trying to arrange for an office and a home as an inducement for an interested physician. The editorial recommended Bricelyn to any young medical graduate looking for a location.

* * *

The resignation of Dr. E. S. Mariette, superintendent of Glen Lake Sanatorium since 1916, was accepted by the Glen Lake Sanatorium Commission, September 8, it was announced by Dr. S. Marx White, president of the Commission. Dr. Mariette has been ill since early August when he was sricken by a cerebral hemorrhage.

Dr. Mariette came to Glen Lake Sanatorium as its first resident physician January 1, 1916. Within the same year, he became its superintendent and medical director, a position he has occupied continuously for the past thirty-three years.

Under his direction, Hennepin County's hospital for the tuberculous has achieved national recognition as one of the great tuberculosis sanatoria of the United States. It was the first tuberculosis hospital in the country to receive a Class-A rating from the American College of Surgeons (1927).

Dr. Mariette, throughout his career as medical director of Glen Lake Sanatorium, has been a participant in tuberculosis control work in Minnesota and on a national scale. A member of the board of directors of the National Tuberculosis Association, he served as president of the Mississippi Conference on Tuberculosis, as president of the Minnesota Trudeau Society and from 1946 through 1948, as president of the Hennepin County Tuberculosis Association. He was chairman of the American Trudeau Society's Committee on Rehabilitation. He was a member of the Hennepin County Medical Society, the Minnesota State Medical Association, the American Medical Association and the American Hospital Association. He is an assistant professor of medicine at the University of Minnesota.

Many outstanding physicians in tuberculosis work were trained under his direction at Glen Lake Sanatorium. Among these: Dr. Frank L. Jennings, superintendent and medical director of Sunnyside Sanatorium, Indianapolis; Dr. Charles K. Petter, medical director of Lake County Tuberculosis Sanatorium, Waukegan, Illinois, and Dr. R. Backus, assistant superintendent of Nopeming Sanatorium, Nopeming. Tuberculosis specialists from many foreign countries have come to Glen Lake Sanatorium to observe its methods of treatment.

A special contribution of Dr. Mariette was his pioneer use of BCG vaccine in the protection of nurses caring for the tuberculous, and in initiating an in-sanatorium program for the rehabilitation of tuberculosis patients. Under his direction, Glen Lake was one of the first sanatoria to establish a co-ordinated rehabilitation program, offering educational training and vocational counseling to patients while under treatment.

Because of Glen Lake Sanatorium's reputation for exact techniques, it was one of few sanatoria frequently selected for special studies, according to Dr. S. Marx White, president of the Glen Lake Sanatorium Commission.

Dr. Mariette is the author of many articles, published in medical and nursing journals, on various aspects of the control and treatment of tuberculosis.

Dr. Mariette was born January 3, 1888, in southern Minnesota. He received his training at the University of Minnesota, obtaining his medical degree in 1913. From 1913 to 1916 he was on the staff of Nopeming Sanatorium.

He has participated directly in the tuberculosis control work of all official and voluntary health agencies in Minneapolis and Hennepin County. His special interest has been in providing medical examination, including tuberculin tests, for rural Hennepin County school children, and in all projects to locate unknown tuberculosis cases.

His resignation will become effective November 1.

* * *

Dr. William B. Stromme, Minneapolis, was guest speaker at a meeting of a postgraduate medical group in Le Mars Iowa, on September 28. His subject was

(Continued on Page 1042)



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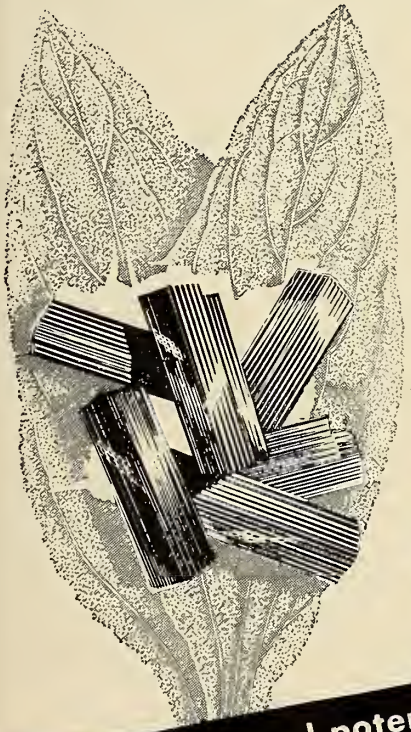
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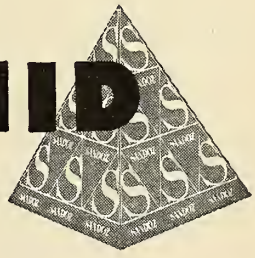
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(Continued from Page 1040)

"Management of Difficult Labors." On October 11, Dr. Stromme presented a lecture on "Management of Normal Pregnancies" before the undergraduate students at Cornell University Medical College, New York.

* * *

Dr. Mitrofan Smorszczok, former practitioner in Poland, addressed a joint meeting of the Rotary and Lions Clubs in Stillwater on September 12 and described the faults of socialized medicine in Soviet-controlled countries.

* * *

On September 5, Dr. Catherine Burns announced that she had become associated in practice with Dr. S. A. Whitson, Dr. J. P. Person and Dr. T. M. Hansen in the Medical Arts Clinic, Albert Lea. A graduate of the University of Minnesota Medical School, Dr. Burns served in the Navy at Great Lakes, Illinois, during the recent war. She then studied at the New York Postgraduate Medical School before opening a practice in Duluth. During last winter she practiced in Fairbanks, Alaska. She is the daughter of the late Dr. H. D. Burns.

* * *

Red Wing acquired a new physician early in September when Dr. Byron B. Cochrane, formerly of Saint Paul, joined the staff of the Interstate Clinic. An ophthalmologist, Dr. Cochrane is heading the eye department of the clinic.

After graduating from the University of Minnesota Medical School in 1937, Dr. Cochrane served his internship at Miller Hospital, Saint Paul, and then engaged in general practice in Saint Paul for two years. From 1940 to 1945 he served in the army part of the time in the Pacific area. Following his discharge, he completed a four-year combined residency in ophthalmology at University and Miller Hospitals. He was associated with Dr. F. E. Burch of Saint Paul until August 31 of this year, when he moved to Red Wing.

* * *

Dr. H. G. Rice, after being associated with the Aitkin Clinic since March, 1946, left for Moorhead on September 1 to resume a private practice that he conducted there before World War II. Dr. Rice served during the war as a Naval flight surgeon.

* * *

Change of address was announced recently for six Minneapolis physicians. The physicians and their new addresses are as follows: Dr. Milton E. Baker, 1409 Willow Street; Dr. Robert G. Tinkhaw and Dr. Curtis V. Rockwell, 3940 Market Street, Edina; Dr. Benedict Trach, 4204 Cedar Avenue; Dr. Barton G. Olson, University of Minnesota Hospitals; Dr. John E. Twomey, General Hospital.

* * *

A four-week postgraduate course in general surgery was completed by Dr. Richard P. Virnig, Wells, on August 6. The course was presented by members of the surgical staff of Cook County General Hospital in Chicago.

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A public meeting, sponsored by the Bloomington Community Health Council, was held in Bloomington on September 9 to discuss the proposed centralized health authority for rural and suburban Hennepin County. Among the speakers at the meeting was Dr. A. B. Rosenfield, director of District Health Unit No. 6, State Department of Health.

* * *

Dr. Tom Davis, II, planned to leave Wadena in October to spend three months doing specialized work in eye surgery in India, at a mission in the town of Patna. A graduate of the University of Minnesota Medical School, Dr. Davis has been a member of the staff of the Davis Clinic in Wadena.

* * *

The Minnesota Division of the American Cancer Society announced on September 8 that it had received a $25,000 grant toward completion of the Minnesota Cancer Research Institute at the University of Minnesota. The grant increases funds made available to the institute in the past two years to $225,000. The institute is designed to occupy two floors of the proposed Mayo Memorial building on the University campus.

* * *

It was announced on August 20 that Dr. Nesmith P. Nelson of Brainerd planned to retire about September 1, and that Dr. George J. Halladay, formerly of Minneapolis, would occupy Dr. Nelson's office. Dr. Nelson has practiced in Brainerd for twenty-eight years, maintaining the same office throughout that time. Before moving to Brainerd, he practiced in Washington, D. C., and Minneapolis.

* * *

Dr. S. R. M. Reynolds of the Carnegie Institution of Washington and Johns Hopkins Medical School, Baltimore, Maryland, will be guest faculty member at a continuation course in obstetrics to be presented by the University of Minnesota on November 17, 18 and 19. The course, which is intended for specialists in obstetrics and gynecology will be held at the Center for Continuation Study. Dr. Reynolds will speak on the subjects, "The Development of the Pregnant Uterus" and "Uterine Mechanisms in Normal and Abnormal Labor."

* * *

On August 11 it was announced that Dr. Warren Haesley of Winona had purchased the medical practice of Dr. Richard F. Herbst in Wykoff and would open his office there soon.

* * *

Formerly of Mankato, Dr. Albert E. Krieser became associated in practice with Dr. L. J. Hoyer in Windom on September 1. During the recent war Dr. Krieser was in military service in Alaska and Germany.

* * *

The Arrowhead Clinic in West Duluth announced on August 4 that Dr. John Van Duyn, formerly of Syracuse, New York, had joined the clinic staff. A graduate of Johns Hopkins Medical School, Dr. Van Duyn was an

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Surgery of Colon and Rectum, one week, starting October 10, November 28.
Esophageal Surgery, one week, starting October 10.
Breast and Thyroid Surgery, one week, starting October 10.
Thoracic Surgery, one week, starting October 3.
Fractures and Traumatic Surgery, two weeks, starting October 3.

GYNECOLOGY—Intensive Course, two weeks, starting October 24.
Vaginal Approach to Pelvic Surgery, one week, starting November 7.

OBSTETRICS—Intensive Course, two weeks, starting November 7.

MEDICINE—Intensive General Course, two weeks, starting October 3.
Gastroenterology, two weeks, starting October 24.
Gastroscopy, two weeks, starting October 24.

DERMATOLOGY—Formal Course, two weeks, starting October 24. Informal Clinical Course every two weeks.

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instructor in general surgery at the University of Syracuse before he became affiliated with the clinic in Duluth.

* * *

Dr. O. A. Eide opened offices for the practice of medicine in Hancock on August 15. In addition to his practice in Hancock, he is assisting his father-in-law, Dr. A. I. Arneson of Morris, at the Stevens County Hospital. A graduate of the University of Minnesota Medical School, Dr. Eide interned at General Hospital in Salt Lake City, Utah. He then served for nearly two years at an Army hospital in Osaka, Japan, returning to the United States in June of this year .

* * *

During August, Dr. Daniel L. Donovan, of the Albert Lea Medical and Surgical Center, attended a two weeks' postgraduate course in diseases of the heart at the University of Chicago.

* * *

The clinical use of anticoagulants was the subject discussed by Dr. E. V. Allen, Rochester at a meeting of the Black Hills District Medical Society at Spearfish, South Dakota, On August 11. Dr. Allen is senior consultant in the diagnostic division of general medicine and surgery at the Mayo Clinic.

* * *

The appointment of Dr. Joseph L. Whelan as chief of the neurology service at Minneapolis Veterans Hospital was announced in August. A graduate of the University of Minnesota Medical School in 1942, Dr. Whelan interned at Detroit Receiving Hospital and then served with the U. S. Air Forces for three years. After his discharge he took postgraduate training in neurology and psychiatry at the University of Pennsylvania Hospital, Wayne University College Hospital and the University of Minnesota Medical School.

* * *

Dr. Leong Hom arrived in Monticello early in August to be associated in practice with Dr. W. E. Hart. A graduate of the University of Minnesota Medical School, Dr. Hom served his internship at St. Barnabas Hospital, Minneapolis.

* * *

Dr. Thomas G. Wellman, practitioner in Lake City, moved to Clinton, Iowa, on July 29 to accept an appointment to Schick General Hospital, which is operated by the Veterans Administration. Dr. Wellman began practice in Lake City in 1940. He entered military service with the Army Air Forces in 1943 and served for three years. Following his discharge, he returned to his practice in Lake City.

* * *

Guest of honor at a tea on August 14 in the Mayo Clinic Women's Club was Dr. Della G. Drips, Rochester, who was presented with a silver service in appreciation of her years of service to the club and to thank her for acting as club physician since 1937.

* * *

Dr. H. H. Theissen who began practicing in Excelsior about August 1, is associated in practice with Dr. M. H. Seifert and Dr. J. A. Dupont of that city. Dr. Theissen served his internship at St. Mary's Hospital, Minneapolis.



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A sixty-day leave of absence was granted Dr. Frank J. Hill, Minneapolis health commissioner, by the Minneapolis board of public welfare on September 2. The purpose of the leave of absence was to enable Dr. Hill to recover from what his personal physician described as nervous exhaustion caused by overwork. Dr. F. G. Gunlaugson, director of communicable disease control in the health department, was named by the board as acting city health commissioner.

* * *

The Minneapolis Children's Cerebral Palsy Center, the first of its kind in the city, opened on August 30 to provide pre-school training for spastic children from two to four years old. The Center officials stated that about twenty children would be cared for five days a week during the next eleven months. Registered therapists have been hired to staff the Center, and a medical committee of ten physicians, headed by Dr. E. J. Huenekens, provides professional guidance.

* * *

Dr. Orville N. Nelson, formerly a practitioner in Battle Lake but who has been located for the past several years in St. Petersburg, Florida, was a guest at a Rotary Club meeting in Fergus Falls on August 17. He was spending his vacation at his summer home on Bottle Lake.

* * *

Head of the surgery department of the new Royal C. Johnson Hospital in Sioux Falls is Dr. Nicholas G. Booselis, who was appointed to the post in August. A native of Faribault, Dr. Boosalis received his medical training at the University of Minnesota Medical School. After completing his internship at St. Mary's Hospital, Duluth, he practiced for a short time at Sauk Center, then entered military service in 1942. Following his discharge in 1946, he completed a residency in general surgery at the University of Minnesota Hospitals and Minneapolis Veterans Hospital.

* * *

Dr. Grant Garlock has become associated in practice with Dr. D. H. Garlock, Dr. A. V. Garlock and Dr. J. K. Hartjen in Bemidji. The son of Dr. D. H. Garlock, Dr. Grant Garlock recently completed his internship at the West Suburban Hospital in Chicago.

* * *

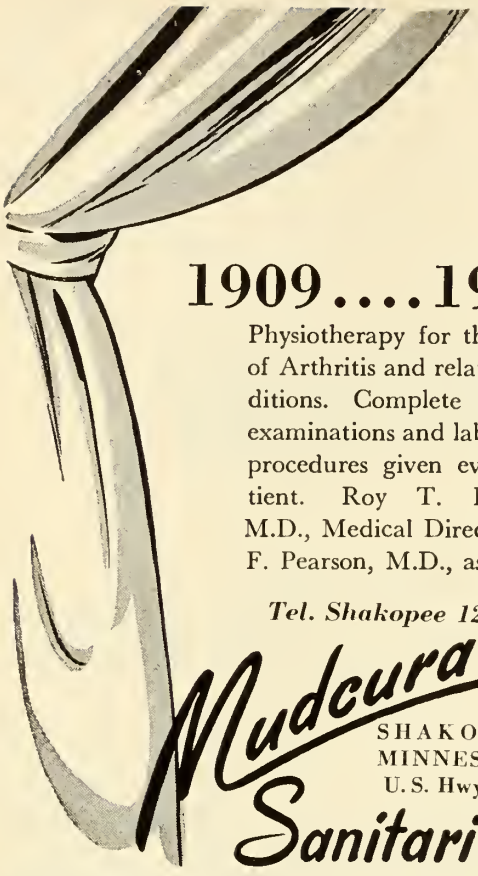
Dr. Wallace Hill moved from Windom early in August, planning to tour Minnesota and North Dakota in a search for a new location for his practice. During the past year Dr. Hill was associated in practice with Dr. L. J. Hoyer in Windom.

* * *

Forty-two years of medical service and civic leadership by Dr. William H. Barr were commemorated by Wells residents at an honor banquet given for the physician on August 31. The banquet and program of tribute were given by the Boy Scouts, Cub Scouts, Campfire Girls and Blue Birds of Wells in recognition of Dr. Barr's service to the children of the community.

The program at the banquet consisted mainly of vocal selections, short talks and skits presented by members of the youth organizations. At the conclusion a scrapbook containing pictures of Dr. Barr's "children" was presented to the physician.

Dr. Barr, a graduate of the University of Illinois



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Medical School, has practiced in Wells since 1907. In his forty-two years there he has served in numerous civic capacities, having been mayor, school board member, chairman of the board of health, and a leader in many other fields of activity. He was a member of the state board of medical examiners for ten years and a member of the state board of health for eight years. In addition to his private medical practice, he is president of the Peoples State Bank, president of the Wells Cemetery Association, and district surgeon for the Milwaukee Railroad.

* * *

Dr. Earl C. Elkins, Rochester, took office as president of the American Congress of Physical Medicine on September 8 at a meeting of the group in Cincinnati, Ohio. The title of his presidential address was "Education in Physical Medicine and Rehabilitation."

* * *

It was announced late in August that Dr. Lyle V. Berghs would resume his practice in Owatonna on September 1, after several months of convalescence in Montana following a major operation.

* * *

Dr. R. I. Gruys, formerly of Detroit, is now associated in practice with Dr. H. C. Stratte and Dr. L. L. Sogge in Windom. A graduate of the University of Minnesota Medical School, Dr. Gruys recently completed three years of practice at Wayne County Hospital in Detroit.

* * *

Major construction work had been completed early in September on a new medical clinic building being erected in Moose Lake by Dr. Alvin Sach-Rowitz. When finished, the structure will house a reception room, consulting room, laboratories, x-ray room, operating room, four examining rooms, and a dental office with laboratories, and a dark room. The upper floor of the two-story building will be divided into three modern apartments. Dr. Sach-Rowitz hoped to be able to move into the new clinic before the end of the year.

* * *

In a talk before the Kiwanis Club in Austin on August 17, Dr. Paul C. Leck of that city denied that a health crisis existed in the United States. In pointing out the progress made by medical science—reducing infant mortality, increasing life expectancy, et cetera—he showed that the claims made by the government officials that a health crisis exists are false. He stated that under socialized medicine there is no assurance that voters would get complete medical service for nearly nothing. "About the only thing the people could be sure of under the government plan," Dr. Leck added, "would be that they would have to pay through special taxes."

* * *

Dr. Edward P. Burch of Saint Paul has been appointed surgeon of the Minnesota Department, Reserve Officers Association. Dr. Burch has been active in the direction of the association's affairs since its reactivation following World War II. He also holds the grade of colonel in the Medical Service Corps Reserve and

ommands the 803rd Medical Center comprising ORC nedical units in Minnesota.

As department surgeon, Dr. Burch will formulate the lepartment's policy with regard to medical affairs as they ertain to the Organized Reserve Corps. The association, n turn, works closely with the Department of Defense n all matters related to the Reserve program. It serves is the collective voice of Reserve officers of the Army, Navy (including Marine Corps and Coast Guard) and Air Force.

* * *

The health committee of the Virginia Chamber of Commerce sponsored a diabetic survey during the week of October 10 through 16. Believed to be the first project of its kind on a community-wide basis, the survey was aimed to uncover unsuspected cases of diabetes. All Virginia residents were urged to participate in the survey and have detection tests made. In charge of the survey was Dr. R. P. Pearsall, city health officer and chairman of the Chamber of Commerce health committee.

* * *

Residents of Browns Valley received their medical care for a short time in August and early September from Dr. G. L. Barnett of Graceville, while Dr. John Noble, Browns Valley physician, recovered from minor injuries suffered in an automobile accident.

* * *

Dr. Clinton C. Berg, formerly of Saint Paul, is now associated in practice with Dr. Lewis Reid in Excelsior. A graduate of the University of Minnesota Medical School, Dr. Berg interned at Ancker Hospital, Saint Paul, then served in the Army for two years. He returned from Japan last spring.

* * *

It was announced in late August that poliomyelitis treatment facilities and services of the Sister Elizabeth Kenny Institute had been offiered to physicians in the Upper Midwest are. Dr. E. J. Huenekens, medical director of the institute, said that letters stating this had been mailed to approximately 5,000 physicians in Minnesota, Wisconsin, Iowa, and North and South Dakota. He said that beds would be assigned to patients in the order in which requests were received.

* * *

Dr. Julian F. DuBois, Jr., has become associated in practice with his father, Dr. Julian F. DuBois, and with Dr. John C. Grant, of the Sauk Centre Clinic. The younger Dr. DuBois served his internship at Sacred Heart Hospital in Spokane, then served in the Army for two years at the Veterans Hospital at Fort MacKenzie, Sheridan, Wyoming. He recently completed a residency in surgery at Northern Permanitti Foundation, Vancouver, Washington.

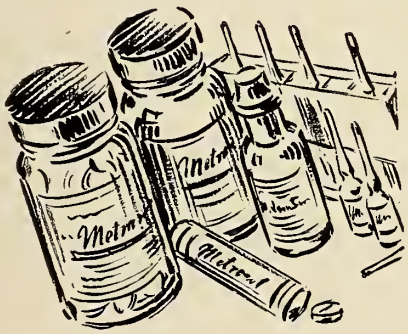
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The third annual meeting of the Minnesota Public Health Conference was held September 30 at the Nicollet

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Hotel in Minneapolis. Dr. T. B. Magath, Rochester, president of the state board of health, presided at a luncheon meeting of physicians and health officers. The principal speaker at the evening banquet was Dr. Leonard A. Scheele, Surgeon General of the United States Public Health Service.

* * *

Dr. Owen H. Wangensteen, chief of surgery at the University of Minnesota, was the recipient of the first award made by the Minnesota division of the American Cancer Society for distinguished service in cancer control at a meeting held September 23, 1949. Dr. Wangensteen has been chief of surgery since 1930, having received the appointment at the age of thirty-two. He has been particularly interested in methods for the detection and treatment of early cancer of the digestive tract.

HOSPITAL NEWS

The new administration and receiving building at the Hastings State Hospital will be completed in May, 1950, at a cost of $917,000. The structure will have two wings, one 131 feet and the other 200 feet long. It will house offices, public reception facilities, a lounge and lunch counter for visitors, a library and gymnasium-auditorium, a cafeteria and forty private bedrooms.

* * *

Mr. Lyle Horton, former assistant manager of the Colonial Hospital in Rochester, has been appointed manager of the Kahler Hospital in the same city. He succeeds Mr. Frank A. Menk, who is now assistant administrator of the George Washington University Hospital.

* * *

Glen Lake Sanatorium will be able to have a balanced budget in 1950, for the first time since 1945. The sanatorium will be "in the black" because of the allowance of the full 4.75 mills which the 1949 legislature authorized the county board to levy for current operations. The full allowance will raise at least $1,589,675 next year and will permit the institution to pay off an expected deficit of $145,000 from 1949.

* * *

It was announced on August 10 that construction work on the $320,000 Community Hospital in Baudette was proceeding at a rapid rate. Brickwork was near completion and plumbing was being installed.

BLUE SHIELD NEWS

Blue Shield is rapidly increasing from month to month. From January 1 to August 31 this year, care given Blue Shield members amounted to $676,693.87, covered 17,790 cases and 3,992 separate services. This is an increase of 1116.36 per cent over last year's $55,-632.74 paid out on Blue Shield cases during the same eight-month period.

As of August 31, 1949, there were 2,468 Blue Shield participating doctors of medicine, and the latest count shows approximately 225,000 persons covered by Minnesota Blue Shield.



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Because of increased growth it has become necessary for the Blue Shield office to devise and put into operation a new method of processing Blue Shield cases. Procedures of older and larger Blue Sheild plans were studied and observed, and the wishes of the physician were kept in mind in planning the new process.

The new method will be used in Minnesota in the very near future, but before it becomes effective each doctor and his office personnel will receive a detailed account as to how it works.

The new procedure requires a new report form of three parts with carbon inserts. The second carbon is to be retained by the attending physician for his files. The original and first carbon is to be mailed to the Blue Shield office. The Blue Shield office will process the case and return the original to the physician with his check.

Many physicians have difficulty identifying the patient from the check voucher as it lists the patient's name only while the doctor's office records may be kept in the name of the family head. The new report form contains the names and addresses of both the patient and the family head on the original copy.

In order to avoid unnecessary work in completing forms, it will be advisable for the doctors' office personnel to become familiar with the benefits provided by the Minnesota Blue Sheild. Every assistance will be given by the Blue Shield office in supplying the needed information.

In addition to streamlining the procedure for handling of cases, the new process will indicate to the Blue Shield patient and to the public in general that the medical profession of Minnesota is supporting voluntary prepaid health care in preference to government controlled medicine. It will be concrete evidence that the family doctor has the interest of his patients at heart and that he is willing to aid them in receiving Blue Shield benefits, which, incidentally, have been increased twice within sixty days at no increase in cost to the subscriber.

The Medical Advisory Committee's recommendation to increase the payment to participating doctors of medicine from the present $75 to $100 for appendectomy procedures performed on and after October 1, 1949, was approved by the Board of Directors of Minnesota Medical Service Inc. All Blue Sheild participating doctors of medicine have received letters to this effect.

Blue Cross is still growing. From January 1 to August 31, 1949, Minnesota Blue Cross provided benefits to 95,702 Blue Cross subscribers, amounting to $5,556,564.76. There are now 950,266 persons covered by Minnesota Blue Cross.

WOMAN'S AUXILIARY

(Continued from Page 1038)

doctors, dentists and others. With such articles as "Information for Mothers," "Questions and Answers," "Schools for Pre-Schoolers," and "Child Training," a gift subscription would be ideal for every home, and particularly for all young mothers.

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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

MANUAL OF HUMAN DISSECTION (Shearer's). Second Edition. Charles E. Tobin, Ph.D., Editor. Associate Professor of Anatomy, University of Rochester School of Medicine and Dentistry. 286 pages. Illus. Price $4.50, cloth. Philadelphia: The Blakiston Co., 1949.

PHENOL AND ITS DERIVATIVES: The Relation Between Their Chemical Constitution and Their Effect on the Organisms. W. F. von Oettingen, U. S. Public Health Service. 408 pages. Price, 70c, paper cover. Washington: Federal Security Agency, 1949.

MANUHUANA IN LATIN AMERICA—The Threat It Constitutes. Pablo Osvaldo Wolff, M.D., Ph.D., M.A. Member of Expert Committee on Habit Forming Drugs of the World Health Organization. 56 pages. Price $1.50, paper cover. Washington: The Linacre Press, 1949.

EVERYDAY PSYCHIATRY. John D. Campbell, M.D. Diplomate, American Board Neurology and Psychiatry; Psychiatrist to St. Joseph's Infirmary and Crawford W. Long Hospital, Atlanta, Ga.; Instructor in Psychiatry, Emory University Medical School; Captain, M.C., U.S.N.R. 2d ed. 394 pages. Price $6.00. Philadelphia: J. B. Lippincott Co., 1949.

Everyday Psychiatry is the scientific book written in a style easy to read. The book is highly recommended as an aid to the understanding of motivations and behavior of patients in all specialties of medicine. Each reader will probably find a different application of the information obtained from this text.

This reviewer found especially valuable the clarity of classification of the psychoneuroses, making it possible to classify easily the majority of psychoneurotic patients. The problem of futility in treating the immutable psychopathic patient is well presented documented and convincing.

B. J. MEARS, M.D.

RYPINS' MEDICAL LICENSURE EXAMINATIONS. Edited by Walter L. Bierring, M.D., F.A.C.P., M.R.C.P. (Edin. Hon.) 6th ed. 690 pages. Price $6.00. Philadelphia: J. B. Lippincott, 1947.

This book offers a brief review of anatomy, pathology, physiology, chemistry, bacteriology, pharmacology, surgery, medicine, obstetrics and gynecology, hygiene and preventive medicine, psychiatry. The plan of the book

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is to present a summary of the subject, and to follow it by a list of questions commonly found on State Board examinations.

The book affords an excellent basis for review of the subjects covered (all that are usually required for State Board examinations), especially for one who is not a recent graduate Anatomy and pathology of course must be studied in conjunction with specimens and slides, or at least an illustrated standard textbook, but the various chapters form an excellent outline of the essential material.

The book might also prove useful to medical students as a final pre-exam review. It would not be suitable as a general quick reference book because there is little detail, and due to the large amount of material covered the index is necessarily sketchy.

Introductory notes on the philosophy and nature of examinations, with particular reference to National and State Boards are helpful and well thought out.

The latest edition features a new chapter on psychiatry.

J.A.M.

HANDBOOK OF MATERIA MEDICA, TOXICOLOGY, AND PHARMACOLOGY. By Forrest Ramon Davison, B.A., M.Sc., Ph.D., M.D. Consultant and Toxicologist, Minneapolis, Minnesota; formerly Assistant Professor of Pharmacology in the School of Medicine, University of Arkansas, Little Rock; Medical Department, The Upjohn Co., Kalamazoo, Mich., Assistant professor of Pharmacology, University of Tennessee Medical School, Toxicologist to University Clinics, Memphis, Tennessee, 4th ed., 730 pages, illus. Price $8.50. St. Louis: C. V. Mosby Co., 1949.

The fourth edition of Davison's Handbook, just off the press, brings the subject up to date by the addition

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of the new drugs. This has been done without crowding out those drugs and preparations with well-established therapeutic value.

This, as well as the previous editions, is a middle of the road type; that is, it does not treat the subject superficially, but gives enough scientific detail to satisfy the student and the busy practicing physician. At the end of each chapter, a list of references is given to guide those wishing to make a more thorough study of any certain drug.

F. H. Magney, M.D.

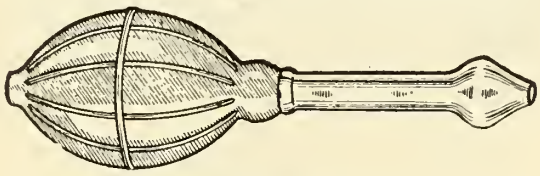
MANUAL OF MEDICAL EMERGENCIES. By Stuart C. Cullen, M.D., Professor of Surgery, Chairman, Division of Anesthesiology, State University of Iowa College of Medicine, and E. G. Gross, M.D., Professor and Head of Department of Pharmacology, State University of Iowa College of Medicine. 267 p. Illus. Price $3.75, cloth. Chicago: Year Book Publishers, Inc., 1949.

Any physician at any time during his lifetime will find himself at the scene of an acute medical emergency. His conduct at that time is important not only because of its reflection on his prestige but because the victim's life depends on it.

This book discusses principles of emergency care, some of which are not commonly known among physicians but are, nevertheless, very important. Especially valuable are the chapters on artificial respiration, circulatory emergencies, and acute poisonings. This is a concise, well-written book which may readily be used for reference.

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TREATMENT OF CARPAL NAVICULAR INJURIES

(Continued from Page 994)

had an excellent result, with complete range of normal painless wrist motion.

Conclusions

These are the important points to be remembered in treatment of carpal navicular fractures:

1. All injuries of the wrist should be carefully examined for possible navicular bone fracture and x-rayed immediately.

2. Initial negative x-rays with positive clinical findings for fracture do not necessarily rule out a fracture. The wrist should be immobilized immediately and x-rays taken again in from one to three weeks.

3. Immobilization should be immediate, continuous, and prolonged until x-ray evidence of the union is demonstrated.

4. Almost 100 per cent of acute fractures of the navicular bone heal with little or no residual disability in the wrist if immobilization is instituted immediately.

5. Bone-graft operation, in experienced hands, offers the best chance for healing in cases of delayed union and non-union.

6. Bone grafting is more accurate when the proximal navicular fragment is slotted with a chisel and the distal fragment drilled under direct vision.

References

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3. Schnek, Fritz: Treatment of delayed callus formation of the navicular by means of Beck's boring via the tubercle. Zentralbl. f. Chir., 57:2600, 1930.
4. Soto-Hall, R., and Haldeman, K. O.: Fractures of the carpal navicular bone. J. Bone & Joint Surg., 39:841, 1941.

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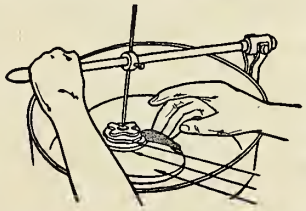
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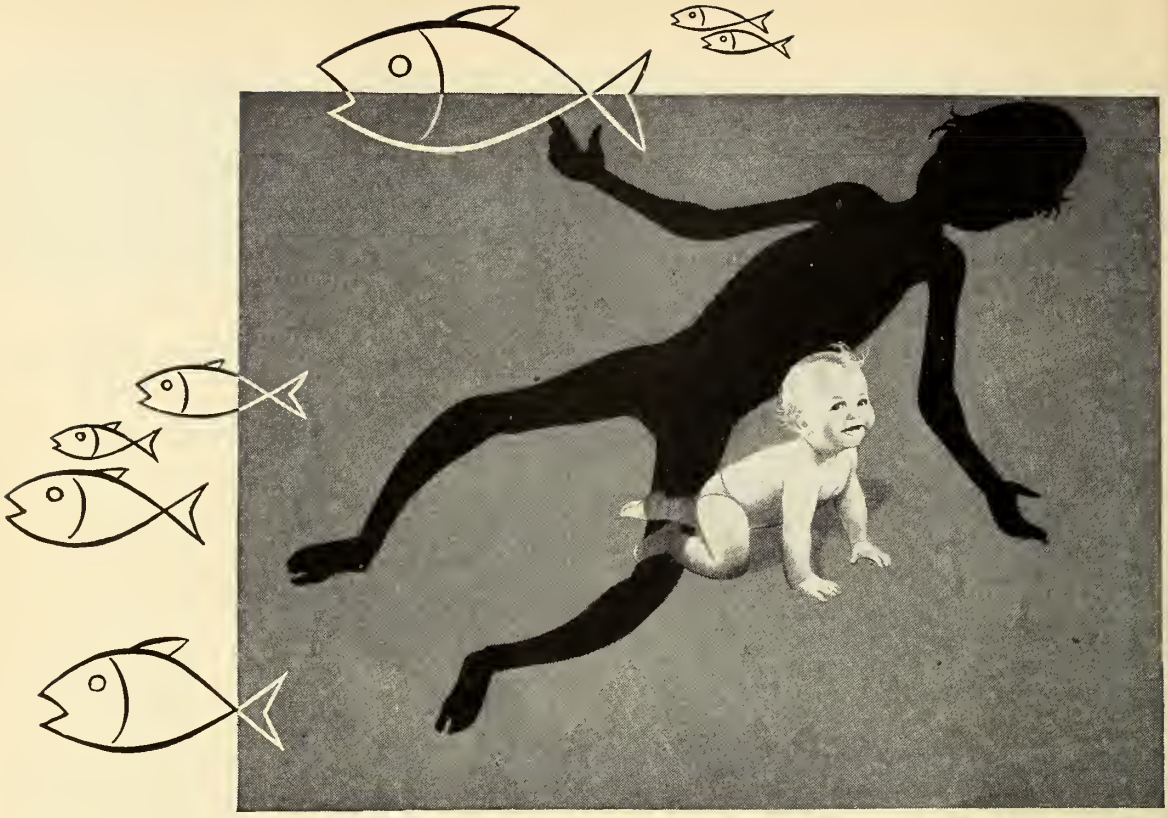
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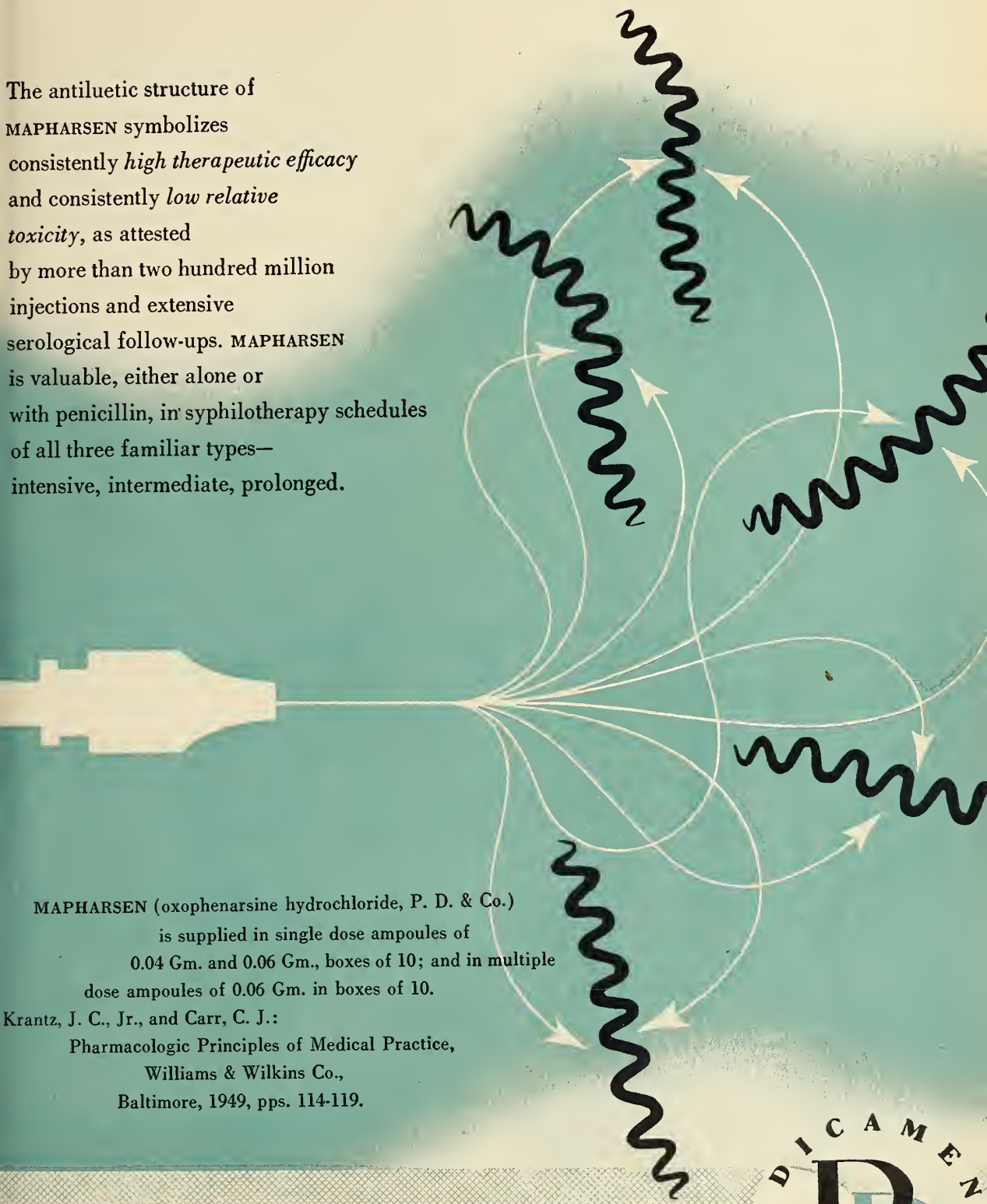
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Krantz, J. C., Jr., and Carr, C. J.:
Pharmacologic Principles of Medical Practice,
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Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

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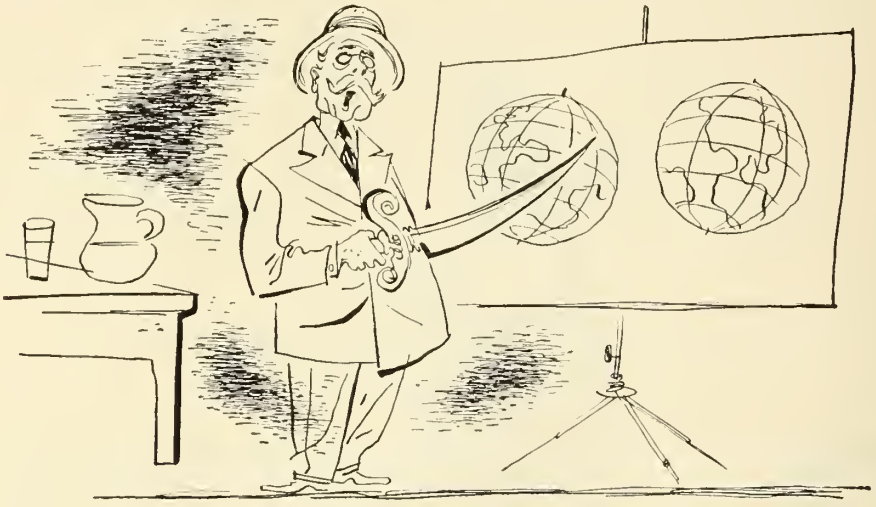
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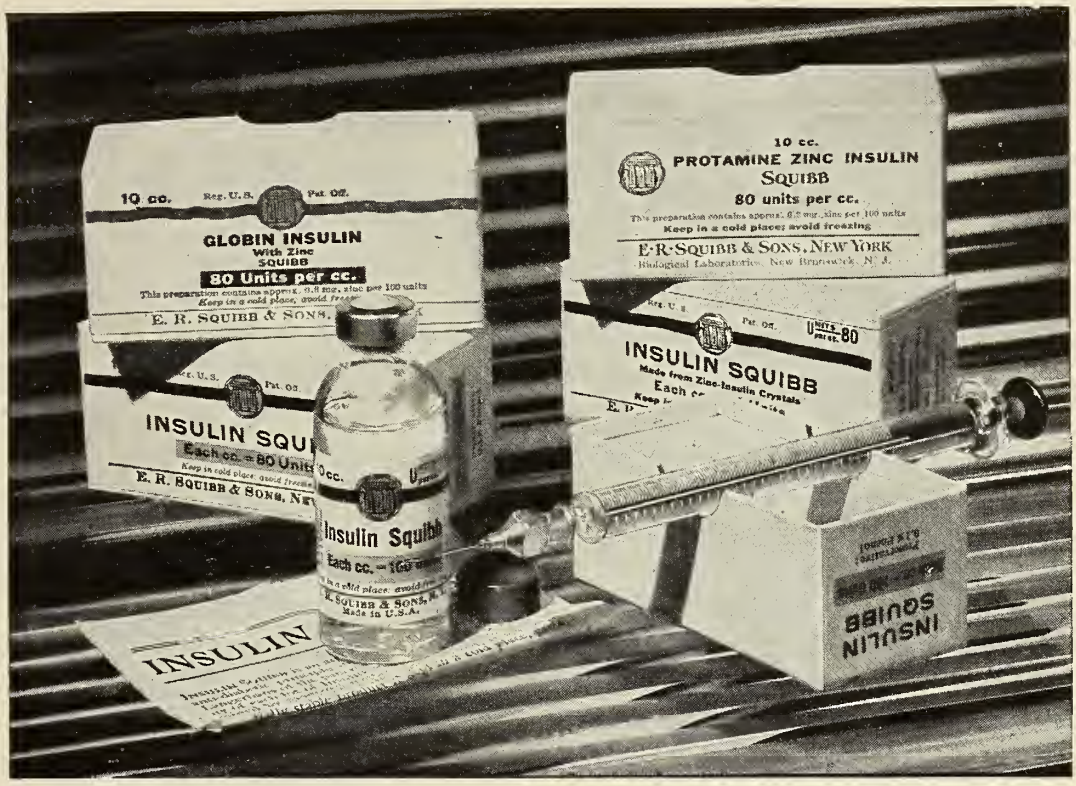
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Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60; Proc. Soc. Exp. Biol. and Med., 1934, 32-241; N. Y. State Journ. Med., Vol. 35, 6-1-25, No. 11, 590-592.

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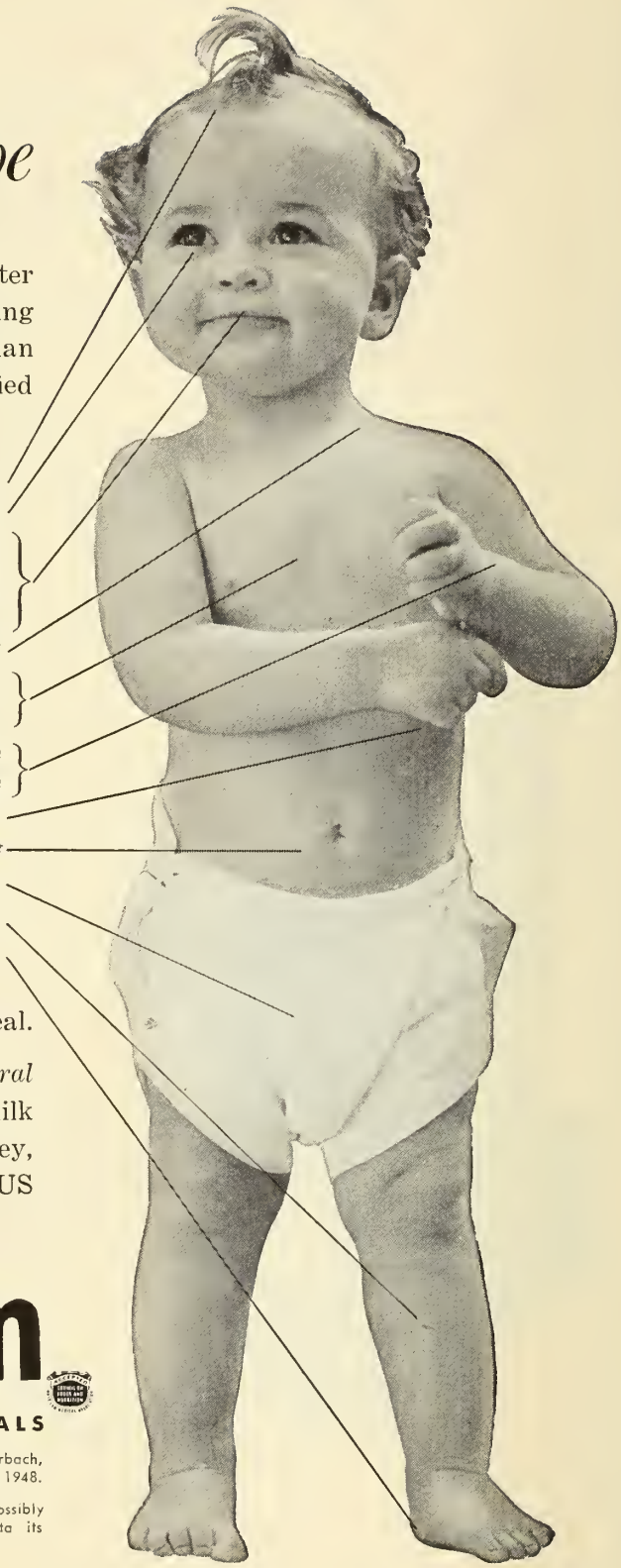


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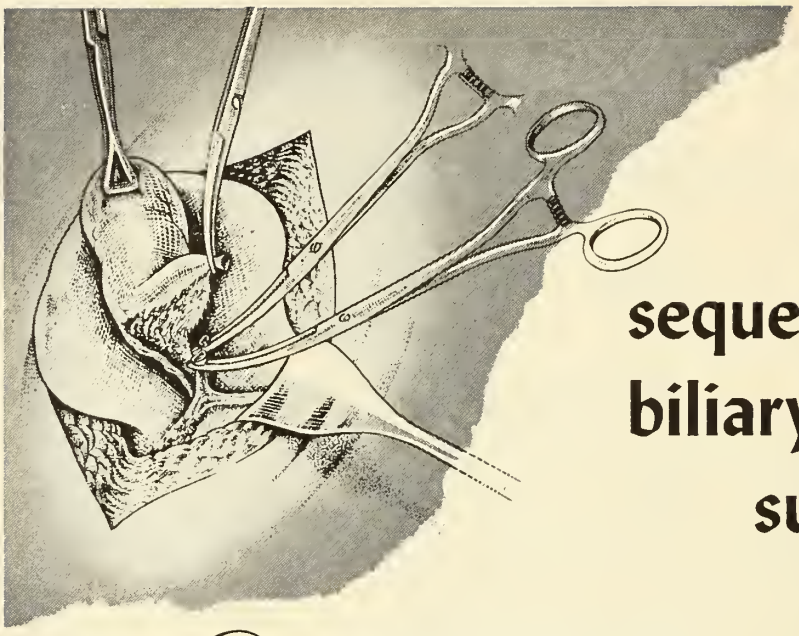
1. Rawls, W. B.: New York Med. (no. 15) 3:19, 1947.

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1. Best, R. R.: Ann. Surg. *128*: 348 (Sept.) 1948.

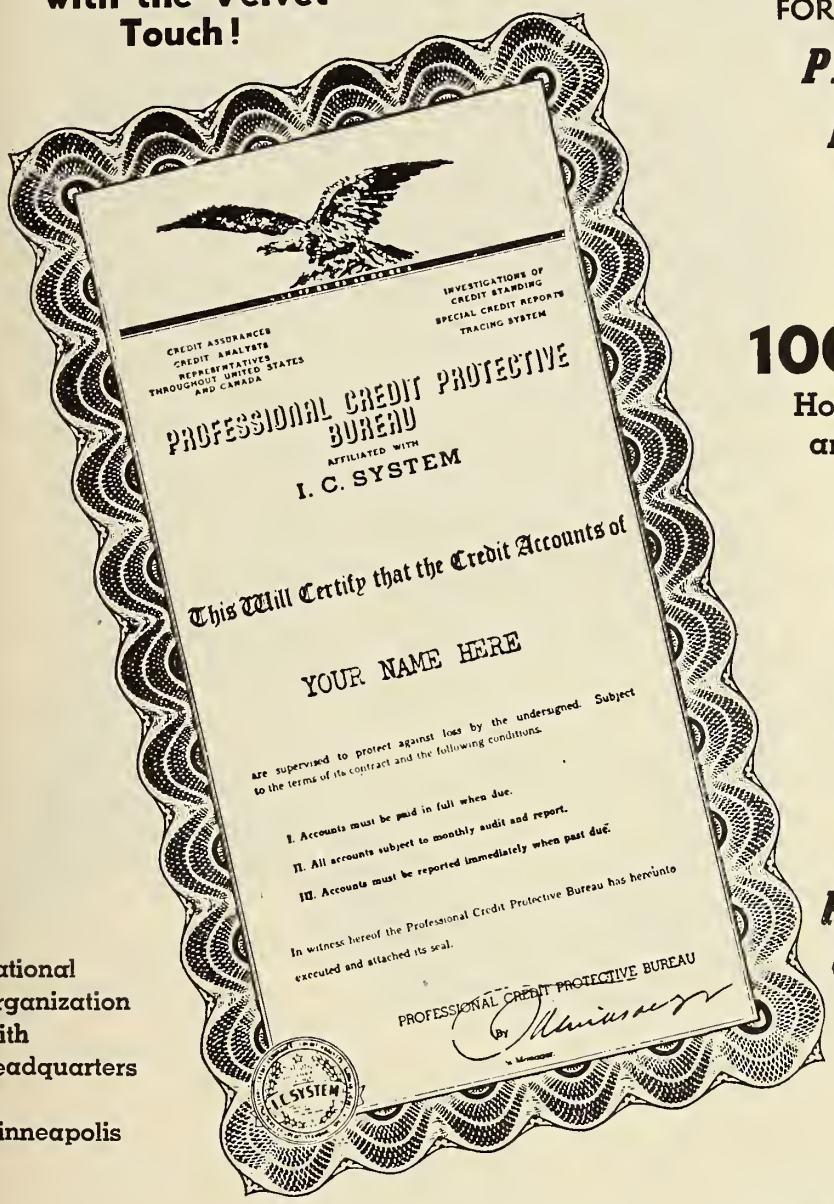
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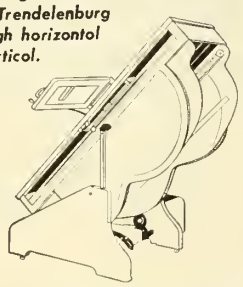
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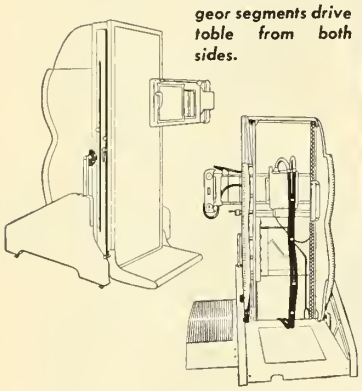
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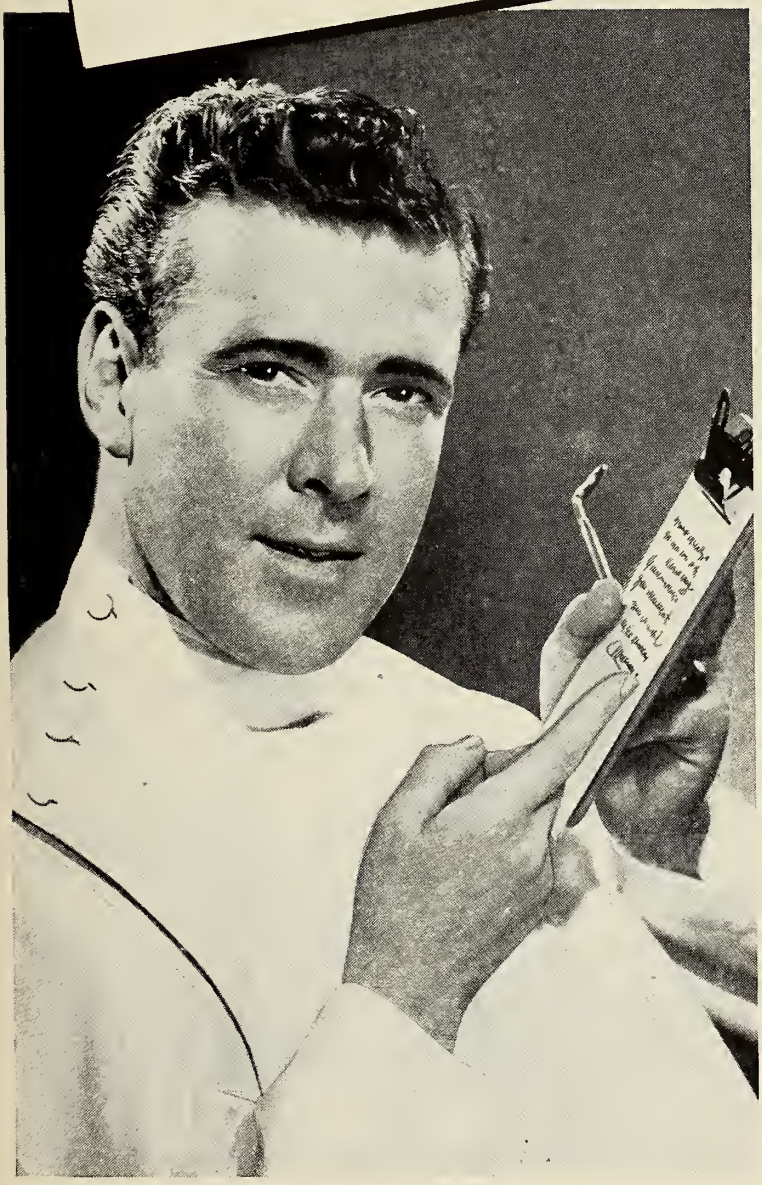
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THE ROENTGEN DIAGNOSIS OF LESIONS OF THE URINARY TRACT

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It is a great honor to be asked to give the Russell D. Carman Memorial Lecture before this Society. One does not have to have been a friend of Dr. Carman or even to have known him personally in order to be influenced by his great contribution to radiology, and indeed to medical practice generally. His work was the foundation of gastrointestinal roentgenology, which in turn is the mainstay in the diagnosis of diseases of the gastrointestinal tract. Many eminent radiologists have given this lecture in years past, and it is with a sense of great humility that I follow in their path. I have chosen as the subject of my remarks today "The Roentgen Diagnosis of Lesions of the Urinary Tract."

ALTHOUGH there are times when the roentgen findings in disorders of the urinary tract seem unequivocal, it is wise to consider all of the other data, i.e., history, clinical examination, laboratory findings with the roentgen examination, before arriving at a final impression. Radiologists must always be willing to discuss the clinical findings with the urologist, surgeon or internist, and vice versa, and an attempt should be made to reconcile all the data. In other words, the radiologist should try to be as much a practitioner of medicine as his consultants and confréres in appreciating the significance of nonradiologic data. In my presentation this afternoon I shall avoid technical details and confine my remarks and illustrations to clinical and roentgen entities.

The Russell D. Carman Memorial Lecture presented at the annual meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 9, 1949.

There are so many conditions of the urinary tract that can be identified or suspected by the roentgenographic appearance that it is obviously impossible to discuss or depict them all in one short hour. I have, therefore, selected such conditions as I thought would interest you and crave your indulgence for what may appear to be gross omissions.

Kidney

In the diagnosis of renal lesions, one can use in addition to the plain films either intravenous or retrograde pyelography. While it is true that intravenous urography has been of distinct advantage in the diagnosis of lesions of the urinary tract, it should rarely be taken as the sole criterion in arriving at diagnoses of pathologic conditions. It is much more valuable in ruling out disease when the findings are normal than in establishing a diagnosis from apparently abnormal findings. We, therefore, prefer to have retrograde pyelograms whenever possible, and to correlate the appearance with the clinical data. This correlation is of paramount importance and no radiologist should be satisfied with seeing only the films.

It is trite to say that in order to recognize the abnormal, one must have a broad knowledge of and acquaintance with the "normal" and its variations. One of the most common sites of such anatomic variation is the renal pelvis and calices. This variation shows itself in the number and size of the calices, the size and shape of the pelvis and of the calycine infundibula. Pelvic anomalies vary from a suggestive bifid pelvis to a double pelvis and ureters.

Duplex kidney is a rather common anomaly which is easily recognized when both pelves are visualized. If only the lower is seen, however, the diagnosis is not so obvious because this pelvis



Fig. 1. (*A*) Duplication of pelvis and calyces of right kidney. (*B*) Hypoplastic left kidney with pelvis somewhat distended.

closely resembles a normal single one. Careful inspection may indicate renal tissue which cannot drain into the visualized pelvis, and then an upper pelvis should be sought. Occasionally it cannot be found, although it may be infected and be the cause of a long period of poor health. Sometimes one or the other of the ureters may end in a blind pouch with little or no renal tissue visible. When no kidney is visualized on one side, one must keep in mind the possibility of ectopic kidneys. Such kidneys may be of the crossed or uncrossed varieties. When crossed, close association of the pelves probably means fusion of the kidneys. These kidneys may also be the site of hydronephrosis or stone.

Horseshoe Kidney.—This anomaly is a fusion, usually of the lower poles of the kidneys, across the midline. There is incomplete rotation of the kidneys, and the pelves are anterior while the calices point posterior. The axes of the pelves lie downward and medial instead of down and lateral as is normal. This condition may occasionally be suspected from the plain film.

Simple Cyst.—This uncommon lesion is either serous or hemorrhagic. A single spherical cyst may arise in any portion of the kidney. These lesions are usually large when discovered and pyelographically cause smooth compression of adjacent calices. Occasionally they are large enough to cause downward displacement of the entire kidney. It is important to keep in mind that they may be exactly simulated by cysts which contain carcinoma and that the malignant and nonmalignant cysts cannot be differentiated roentgenographically. They must, therefore, all be attacked surgically as though they were malignant.

Polycystic Kidney.—As the name implies, in this condition the kidneys are the sites of multiple cysts. The condition is bilateral, familial and congenital. In the stage in which they are usually seen, there are bilateral abdominal masses. The renal shadows are grossly enlarged, the calices are distorted, compressed and elongated and there is relative decrease in the size of the pelvis. Excretory urograms are unsatisfactory because function is poor. Bilateral examinations should always be done because the deformity may closely resemble a malignant neoplasm. A hypoplastic kidney is essentially of normal configuration, but the pelvis and calices are smaller than normal. With retrograde pyelography, the pelvis is somewhat dilated because its presence is usually unsuspected.

Renal Calculi.—Renal calculi are ordinarily visualized because of their content of calcium in the form of carbonate, oxalate or phosphate. They may also contain other urinary constituents such as uric acid, xanthine, cystine, the urates and cellular debris, but the resultant "stones" will then probably be radiolucent. Renal calculi are most commonly unilateral, although they may occur on both sides. The first roentgen examination in cases of suspected renal calculi should be a plain film. This must be of excellent quality if small stones are to be found. Retrograde studies may be valuable in determining the presence or absence of renal damage, but it must be remembered that these opaque pyelograms will obscure an opaque calculus. Stones free in the pelvis tend to be spherical while those in the calices may be flat or conform to the space which contains them. Calculi of low density may be discovered because they displace the opaque medium or if an air pyelogram is made they will stand out in contrast to the air. Stones are a frequent cause of renal damage both when in the kidney and when they cause ureteral blocking. As intracalycine calculi grow, they may completely fill the pelvis and cal-

ices and form a staghorn or coral calculus which renders the kidney relatively functionless. However, continued growth of a calculus means that some renal function has been maintained.

The calcium oxalate stone has a characteristic "mulberry" appearance and can be recognized on the film. Small groups of stones in the parenchyma are frequently indicative of a calycine diverticulum. These are outpouchings of the mucosa of a calix. Multiple renal stones are not too uncommon but they are rarely facetted. When they are facetted and especially when they lie on the patient's right side, they must be distinguished from gall stones, pancreatic stones, et cetera. Diffuse and rather generalized deposits of calcium throughout the kidneys (nephrocalcinosis) may occur as a part of the picture of hyperparathyroid disease or excessive intake of calcium and vitamin D. Also any factor which causes necrosis of the renal tissue may lead to amorphous calcific deposits in the kidneys. These conditions may be infectious or toxic from such substances as mercury or uranium.

Renal Infections (Nontuberculous).—The kidney is not infrequently the site of acute inflammatory lesions. Pyelitis without nephritis probably never exists independently for more than a very short time so that the term pyelonephritis is probably a better general term. The condition seems to be brought about mainly by a blood-borne infection, although ascending infection through the ureteral lymphatics either before or after catheterization appears to be a definite etiologic factor in some cases. Infection through the blood stream is due most commonly to the staphylococcus while either the colon bacillus or the staphylococcus may be the causative organism in the ascending variety.

In the acute infections, the roentgenological evidence may be chiefly of a negative character, although definite pathologic changes may be seen in the pyelogram. Frequently excretory urograms show no evidence of renal function. In the blood-borne coccic infections, the pathologic changes are chiefly in the renal cortex, and these will not be evidenced on the retrograde pyelogram unless there is extensive breaking down of cortical tissue with communication of the abscesses with the pelvis. If the condition is suspected, it is better not to do retrograde pyelography.

"Carbuncle" of the kidney usually arises subsequent to a distant infectious process such as osteomyelitis or furunculosis. If the lesion is suspected clinically because of leukocytosis, costovertebral angle pain and tenderness, only plain films should be made. These may show enlargement of the renal shadow and loss of visualization of the psoas border. With normal findings, however, the diagnosis can still be made from the clinical history, examination and laboratory data. Acute pyelitis frequently shows no pyelographic changes or perhaps only a little relaxation or mild dilation of the pelvis. Soon, however, there is a fuzzy outline of one or more of the calices with slight increase in size.

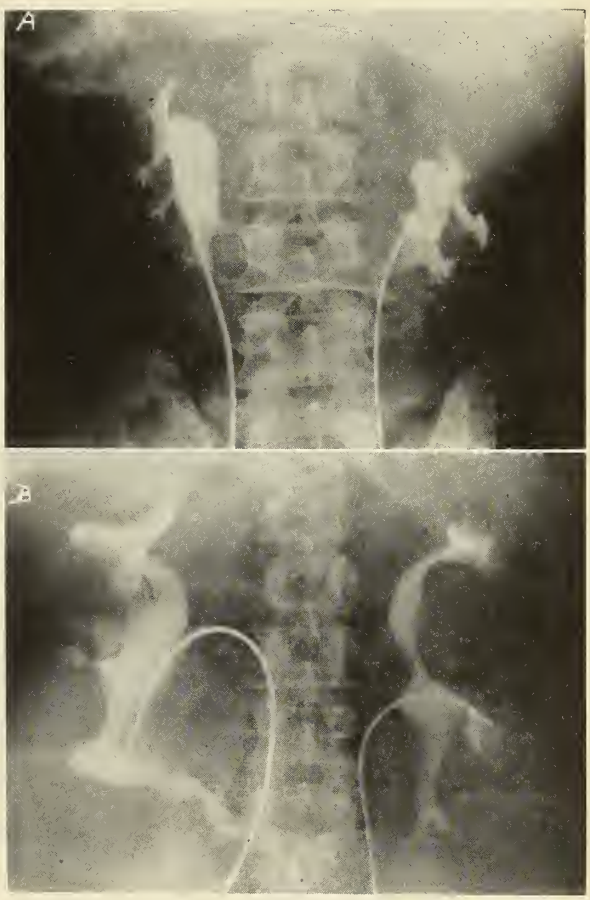


Fig. 2. (*A*) Horseshoe kidney. Axes of pelvis run inferomedial instead of inferolateral as is normal.
(*B*) Distortion of pelvis and elongation of calyces in polycystic kidneys.

As the pyelonephritis becomes chronic, more definite and characteristic changes are noted radiographically. The calices become blunted and more dilated and the infundibula or necks become progressively narrowed. This is accompanied by more caliectasis and ureterectasis.

In the late stages of the disease, it becomes ob-

vious that there is extensive renal damage, and with the development of large necrotic, infected pockets the condition becomes known as pyonephrosis. This may also be the result of an infected hydronephrosis.

Perirenal or perinephritis abscesses may be suspected on the basis of one or more of several roentgen signs: (1) failure to visualize the psoas border, (2) scoliosis of the spine with concavity toward the affected side, (3) displacement and/or rotation of the kidney, (4) immobility of the kidney, (5) obliteration of the normal renal outline, and (6) extravasation of the opaque material outside the kidney. Immobility of the kidney can be determined by fluoroscopy or by making exposures in deep inspiration and expiration on the same film. Occasionally, a colon bacillus infection in a patient with uncontrolled diabetes will present a picture of perirenal and intrarenal formation of gas. This can be recognized by the linear and radiating shadows of decreased density.

Renal Tuberculosis.—Tuberculosis of the kidney is usually a localized manifestation of a more generalized disease. Spread is probably through the blood stream from foci in the lungs, bone, et cetera. The first detectable change to be noted on the pyelogram is a ragged appearance of one calix. This occurs only when the infection, which originally was cortical or medullary, becomes closely associated with a calix. As the tubercle grows and causes more swelling, localized edema or scarring, one or more calices may be closed off and not be visualized, more and more calices are involved and a rough, irregular outline of the pelvis and calices results. The pelvis is rarely enlarged. The ureter is involved fairly early in the process and becomes irregular, with areas of constriction and dilatation which gives it a so-called beaded appearance. This is so constant that any "beaded" ureter is likely to be a concomitant of renal tuberculosis.

As the disease becomes farther and farther advanced, the kidney assumes the appearance of a pyonephrosis, at which time the beading of the ureter may be the only feature distinguishing it from a nontuberculous process.

Calcific deposits may follow the tuberculous necrosis and caseation, so that amorphous calcium in a kidney with any of the above characteristics is additional evidence of the tuberculous basis of the findings.

In the most advanced and healing cases, there is partial calcification of the large tubercles into a lobulated whole. This is the stage of so-called "autonephrectomy." When this occurs, the size of the visualized calcification is about that of a normal kidney. This point is helpful in distinguishing it from calcific deposits in large renal tumors.

Hydronephrosis.—Hydronephrosis is a dilatation of the renal pelvis and calices. In the early cases it is not easy to be sure that a hydronephrosis exists because of the possibility of overdistension of the pelvis at the time of making the retrograde pyelogram. In these cases an excretory pyelogram will give a more accurate impression regarding pelvic volume. Hydronephrosis can be caused by anything that obstructs the normal flow of urine anywhere along the urinary pathway from the calices to the urethra. The causes may be stones, new growths, kinks, aberrant vessels or strictures, either congenital or acquired. Congenital thickening of the musculature and connective tissue about the pelvic outlet is also said to be a common etiologic factor in the production of so-called congenital hydronephrosis. Aberrant blood vessels cause hydronephrosis by pressure on the ureter at the ureteropelvic junction. These may also be associated with a ureter that is placed abnormally high. This position precludes proper drainage of the pelvis and tends, therefore, toward the production of hydronephrosis. As dilatation occurs, the kinking increases and thus a vicious circle is established. The enlargement in these cases may be huge. In the mild forms, there is an increase of the volume of the pelvis with gradual extension of the process to the calices, as indicated by blunting of the fornices. Further dilatation is made at the expense of the parenchyma. Localized caliectasis can be caused by a stone or by stricture of an infundibulum. If the lesion is distal, the ureters may also show extreme degrees of dilatation.

Moderate degrees of hydronephrosis whether infected or uninfected have practically the same appearance, but later as the condition becomes a true pyonephrosis the outlines become hazy and irregular.

Dilatation during Pregnancy.—This is a normal finding and seems to be due to a combination of pressure of the growing fetus on the ureters and

an endocrine or hormonal effect of the pregnancy. This condition is frequently called "pyelitis of pregnancy," but many times there is no infection. Involution begins as soon as the pregnancy is terminated. Repeated pregnancies appear to predispose to increased dilatation, but infection probably plays its part in the residual dilatation.

The roentgen examination should consist of plain films, retrograde pyelograms in the anteroposterior projection, and other views, such as laterals or obliques, as they are indicated. The pyelographic changes will be those caused by the growth of the mass. This will cause pressure defects or filling defects in the contrast medium. A single calix may be deformed, calices may be separated or encroached upon and the kidney may be enlarged in whole or in part. A not infrequent finding is the so-called "spider leg" deformity which may resemble a polycystic kidney. Calcification is a fairly common accompanying finding with renal neoplasms and occurs in about one-third of the cases. The more advanced lesions with necrosis are more prone to show these calcific deposits. They occur most commonly as amorphous flecks scattered throughout the tumor, although larger masses may be seen. It has been said that any "crazy" pyelogram, i.e., any that does not suggest a definite entity, should be looked upon with suspicions of a malignant renal neoplasm in mind.

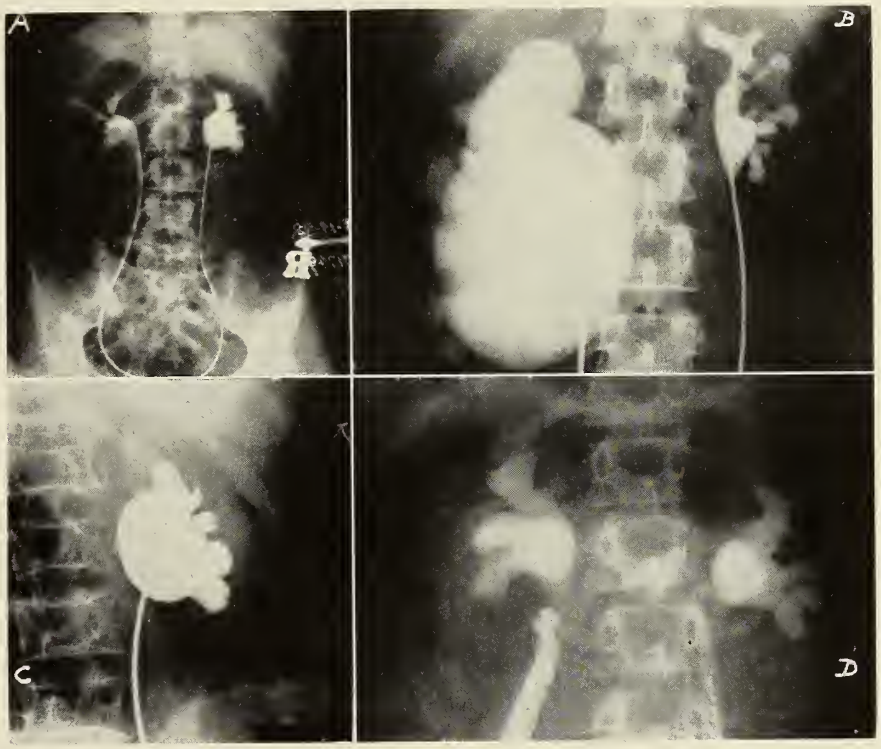


Fig. 3. Hydronephrosis. (*A*) Mild. (*B*) "Congenital" from aberrant vessel. (*C*) Moderately extensive from obstruction. (D) In pregnancy.

Renal Neoplasm.—In no other condition of the kidney is it so important to make an early diagnosis as in malignant neoplasms. In suspected cases, retrograde pyelography should always be done because in no other way can as good visualization be obtained. There is no single "typical" picture of a renal cortical tumor because the changes produced depend upon its site of origin, its relationship to the pelvis and calices and its method and direction of growth. These tumors comprise about 90 per cent of the primary renal tumors of adults, are three times as common in men and appear most frequently in the fifth and sixth decades. The commonest symptom is hematuria which may be intermittent or continuous, slight or hemorrhagic in character. A mass is frequently found and pain is common.

Pelvic neoplasms are not nearly so common as the cortical group. They may, of course, be be-

nign in character, but any lesion of the pelvis which is not a stone should be regarded with frank suspicion. These may show as filling defects in an otherwise normal pelvis or they can be detected by air pyelograms. Most commonly, however, when they are first seen they are extensive and have already grossly deformed the pelvis and invaded the parenchyma. The most common malignant tumor of the kidney in childhood is the Wilms' tumor or embryomal adenomyosarcoma. It is usually found by the mother and presents as an abdominal mass in a child who is ill and listless. Hematuria is uncommon. Films of the abdomen show a large soft tissue mass and pyelograms show renal displacement and pelvic distortion.



Fig. 4. Renal calculi. (*A*) Small single stone at tip of catheter.
(*B*) One kidney in nephrocalcinosis due to hyperparathyyroid.
(*C*) Coral or staghorn calculus.
(*D*) Epithelial detritus or cholesteatoma visualized against air injected into renal pelvis.

Metastatic lesions to the region of the renal pedicle, particularly from testicular neoplasms, may masquerade as primary tumors. Correlation of clinical data is of the utmost importance in these cases.

Blood Clots.—With renal bleeding from any cause (and almost any renal lesion may be accompanied by small amounts of blood) clots may form in a calix or pelvis. These must be differentiated from non-opaque stones and tumors of the pelvis or parenchyma. Their presence is indicated by a filling defect in the opaque medium. Due either to a shrinkage of the clot or distention of the calix, the defect caused by the clot is surrounded by the opaque material. The apparent extent of involvement by tumor is increased when blood clots are present.

Ureter

The ureter is not the site of as many pathologic conditions as is the kidney.

Congenital Anomalies.—These consist mainly of duplication and are usually a concomitant of a bifid or double kidney. The two ureters on one side may unite at any height, enter the bladder separately or one may empty into the urethra. One importance which may be attached to the anomaly of complete duplication of a ureter is that only one orifice may be found and consequently a second kidney, which may be the site of an active or recurring infection, may not be discovered.

Calculi.—Ureteral calculi are practically always found in the kidney and pass into the ureter. From here they may pass into the bladder or they may remain in the ureter and cause urinary obstruction. They may even grow to large size and cause complete destruction of the kidney with hydronephrosis and hydroureter. It is, therefore, important to localize a stone in the ureter even though it is small. Films of good quality are of great importance to this end. These calculi may be confused with (1) phleboliths, (2) calcific arterial plaques, (3) transverse vertebral processes, (4) calcified lymph nodes, (5) detached vertebral osteophytes and (6) artefacts produced by blemishes on the intensifying screen. Calculi in a ureter may be multiple but are ordinarily single.

As noted above under tuberculosis of the kidney, the ureter frequently shows "beading" or alternate points of constriction and dilatation. In far-advanced cases of renal disease, this may be the only indication that the condition in the kidney is tuberculous.

Primary neoplasms of the ureter are rare, but implants from tumors of the renal pelvis are not uncommon. They cause a ragged appearance when the ureter is filled with an opaque medium.

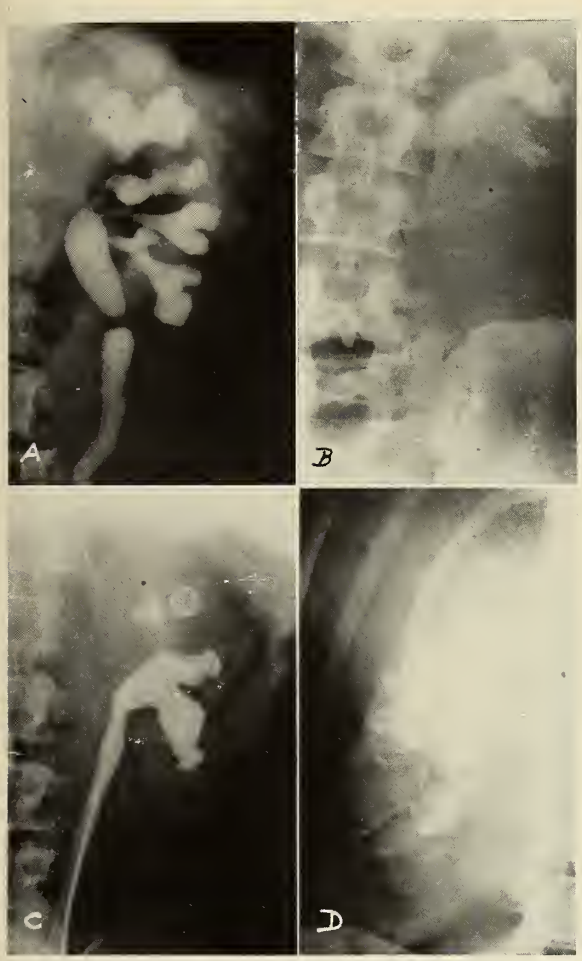


Fig. 5. (*A*) Chronic pyelonephritis with narrowing of infundibula.
(*B*) Elevation and rotation of kidney with compression of lower calyces from perinephritis abscess.
(*C*) Early tuberculosis showing distortion of calyces in upper pole with formation of small abscess.
(*D*) Late renal tuberculosis with so-called autonephrectomy, i.e., "putty" kidney.

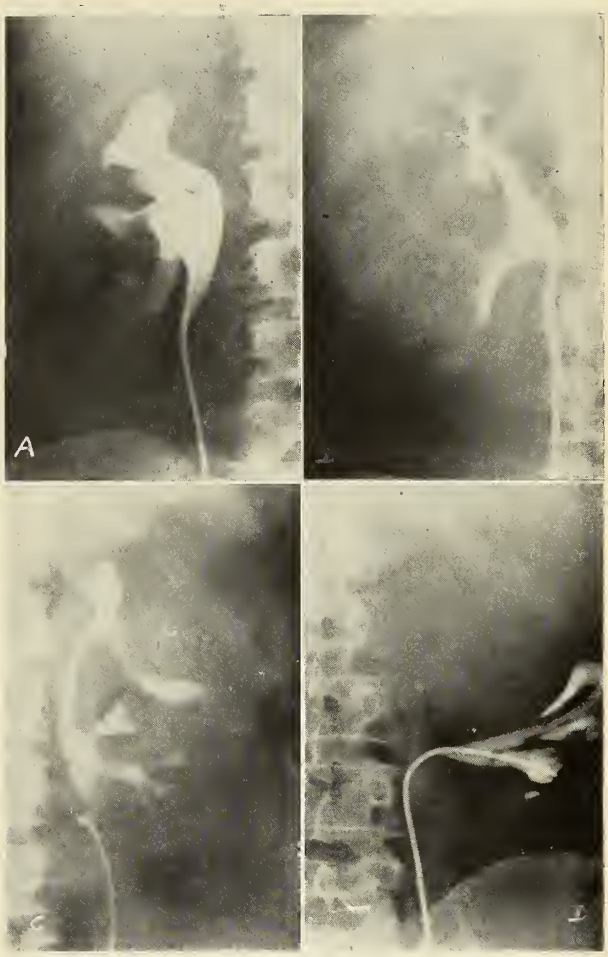


Fig. 6. Various types of renal neoplasm.

Any condition which causes obstruction of the ureter will cause its dilatation. These conditions may be congenital and acquired stenoses, calculi, benign or malignant neoplasms or infection. The condition is generally, therefore, the result of a process elsewhere.

Ureterocele shows a bulbous protrusion from the lower end of the ureter into the bladder and can be visualized by either opaque or air cystograms. It may also contain stones.

Bladder

The best way to examine the bladder, perhaps, is visually through the cystoscope. There are many times, however, when additional information may be secured by a good roentgen examination. This consists of (1) a plain film, (2) an opaque cystogram and (3) an air cystogram. Done carefully, this last type of examination is without danger of causing air emboli.

The normal bladder may be spherical or ovoid, and its size depends somewhat on the distention. An impression in the upper surface from the uterus is not infrequently seen in women.

Occasionally a fluctuant mass is present in the inguinal region when the bladder is full, but this mass disappears or shrinks on voiding. This event should arouse the suspicion of an inguinal cystocele or vesical diverticulum in an inguinal hernia. It can be found best with the aid of an opaque cystogram.

Exstrophy of the bladder is indicated by a wide separation of the pubic arch, but of course a radiograph is unnecessary to diagnose the condition. It is interesting to note, however, that epispadias is also accompanied by the same osseous maldevelopment.

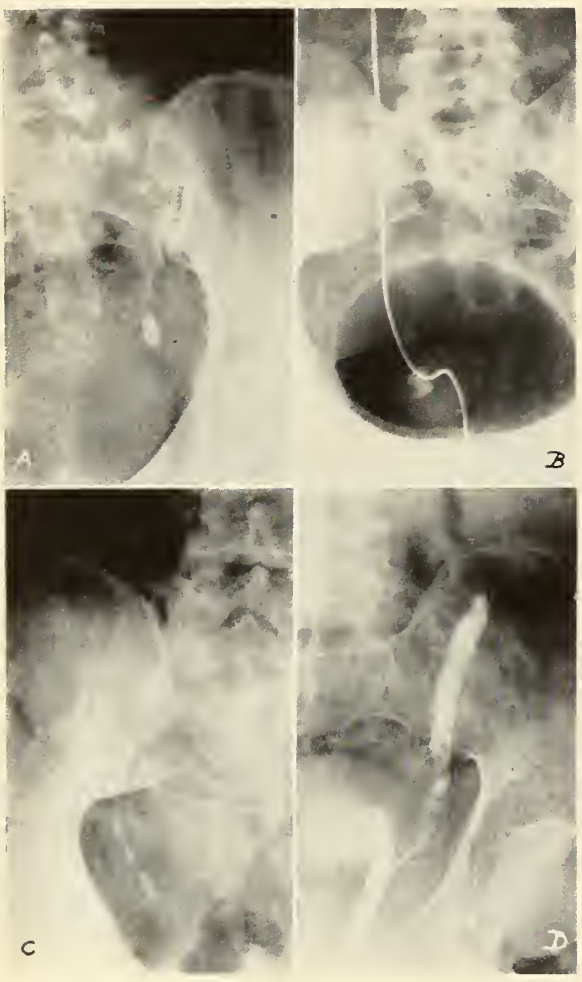


Fig. 7. (*A*) Ureteral calculus.
(*B*) Ureterocele with calculi.
(*C*) Scarred, calcified ureter with renal tuberculosis.
(*D*) Neoplastic involvement of ureter secondary to carcinoma of renal pelvis.

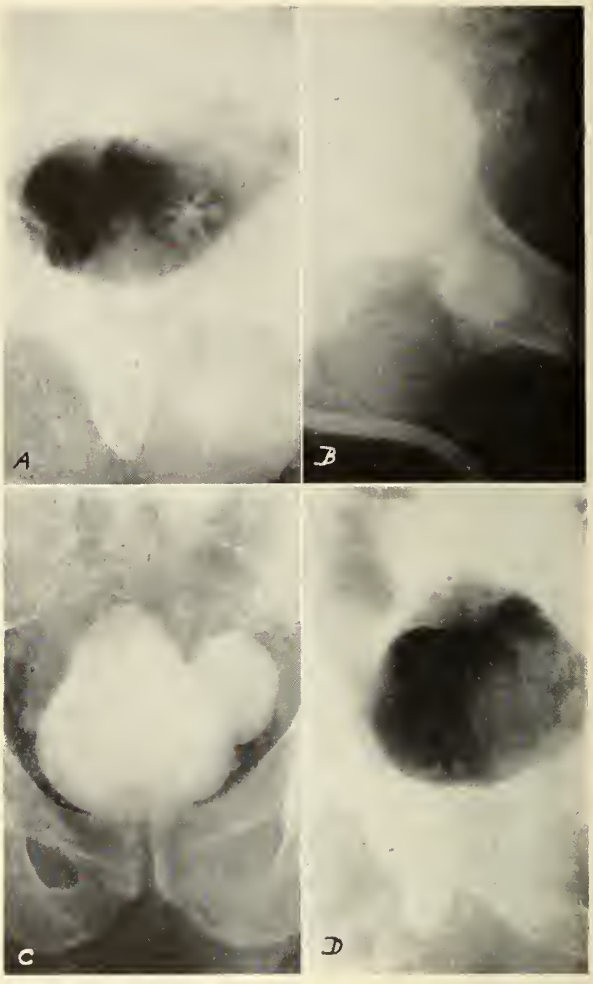


Fig. 8. (*A*) Jack stone (oxalate) vesical calculus.
(*B*) Inguinal cystocele.
(*C*) Diverticula of bladder.
(*D*) Fungating carcinoma of bladder.

Calculi.—Calculi in the bladder are common and vary from very small to large stones. They are usually ovoid and are not uncommonly multiple. Facetted stones are infrequently seen, however. Ordinarily, vesical calculi contain sufficient calcium in one form or another to show on a plain radiograph, but if they are of low density they will show best on an air cystogram. Uric acid and urate stones which are common in the bladder are best depicted this way. Opaque cystograms are likely to obscure any calculi. Occasionally a stone will form in a diverticulum and will then appear outside the visualized bladder. Oxalate stones have an appearance suggestive of a "jackstone" or "mulberry" and can be distinguished by their form alone. Foreign bodies introduced into the bladder of a sexual pervert may have stones form around them. Matches, vials, catheters and other articles may occasionally be found. Needles and sponges left in the abdomen or pelvis may also erode into the bladder. Under these circumstances a sponge may clinically and roentgenographically resemble a vesical neoplasm. The differentiation can usually be made on cystoscopy, however.

The use of cystography for the detection of suspected placenta previa was an important contribution to the subject. We prefer the air cystogram, and anteroposterior and oblique films seem to us to give the most information. The usual width of the space between the fetal skull in the third trimester of pregnancy and the vesical wall is about one centimeter. A placenta previa will cause an increase in the width centrally or laterally in marginal cases.

Infection.—This can best be detected by cystoscopy or by examination of the urine. In the rare case of cystitis emphysematosa, however, where there is gas beneath the mucosa, a plain radiograph will graphically show the extent of the lesion.

Cord bladders are best depicted by visualizing also the prostatic urethra and vesicle neck. The vesical neck is conical due to relaxation of the internal sphincter while the function of the external sphincter remains unimpaired.

Neoplasms.—Neoplasms of the bladder can usually be seen satisfactorily through the cystoscope, but their extent can frequently be better demonstrated with air cystograms in which the tumor is silhouetted against the air.

Bladder Secondary to Urinary Obstruction.—Obstruction distal to the bladder may be from strictures, congenital or acquired, calculi, benign or malignant neoplasms, neurogenic dysfunction, valves, bars, et cetera. The first visible change is a roughening of the vesicle outline caused by hypertrophy of the muscular fascicles. The mucosa is later pushed between the muscle bundles, and cellules or small diverticula appear. These may enlarge to almost any size, even larger than the bladder itself. A large diverticulum may displace the bladder and of itself cause dysuria, or it may contain calculi or be the site of a neoplastic growth.

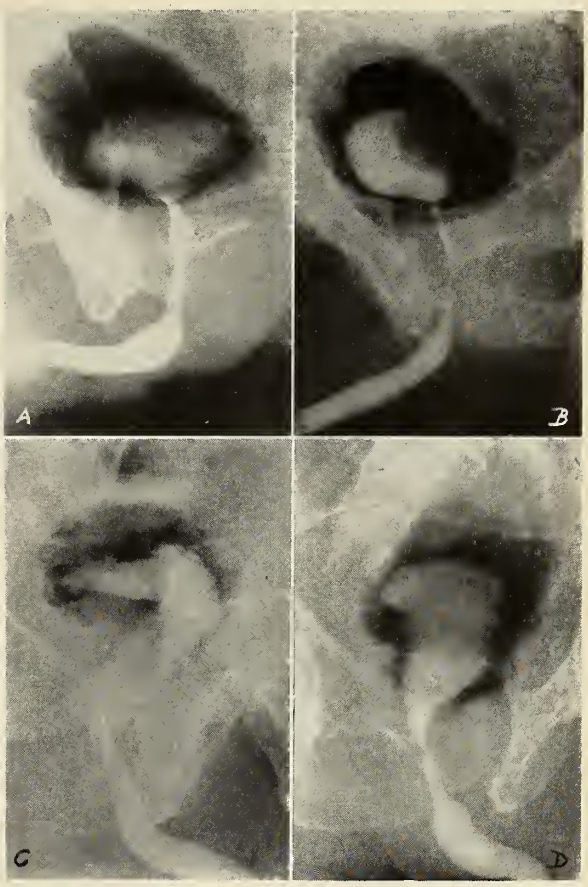


Fig. 9. (*A*) Normal cystourethrogram.
(*B*) Carcinoma of prostate showing constriction of prostatic urethra.
(*C*) Benign hyperplasia of prostate with angulation and widening of urethra.
(*D*) Same patient showing funneling of vesical week after transurethral resection.

Prostatic or Posterior Urethra.—Examination of this portion of the urethra by the roentgen ray does not and should not displace the use of the cystoscope, urethroscope or examining finger, but it frequently adds to the information that can be obtained by the conventional methods.

In our experience, roentgen examination of the vesical neck should consist of at least an anteroposterior opaque cystogram and an oblique film with air in the bladder and an opaque jelly in the urethra. These films give information regarding the relative enlargement of the lateral lobes and the posterior commissure and whether or not there is enlargement of the subcervical node of Albarran. The visualization of the urethra gives information relative to the adequacy of the urinary pathway and whether or not there is probable neoplastic involvement of the prostate. One of the main values of cystourethrography is in demonstrating the adequacy of the urinary pathway following resection for benign prostatic hyperplasia or carcinoma.

Other abnormalities of the urethra such as congenital valves, and strictures, inflammatory and traumatic strictures, abscesses, fistulas, et cetera, can be demonstrated on films after the injection of opaque material. The infrequent stone can also be demonstrated on a plain film.

Conclusions

Roentgen ray examination of the urinary tract is a valuable and frequently an indispensable method of determining the type and extent of pathologic processes which involve this system.

CLINICAL ASPECTS OF THE MANAGEMENT OF ENDOMETRIOSIS

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THE SYMPTOMS of endometriosis are characteristic. They may appear at any time during the reproductive age period but most frequently after the age of thirty. Endometriosis occurs more commonly in individuals who have not been pregnant or after a period of several years without conception. The characteristic symptom is pain associated with the menstrual periods. It is typically progressive in severity and gradually antedates the period by a longer interval until the patient complains of pain during the second half of the cycle and throughout the menstruation. In advanced cases, some pain may be present all of the time but is exaggerated as the menstrual period approaches. Many patients with endometriosis show a disturbance of the menstrual cycle with profuse and prolonged periods or occasionally with irregular bleeding episodes.

The physical findings are also readily recognized and include the demonstration upon pelvic examination of fixed nodular, often cystic, adnexal masses associated particularly with nodulation in the posterior cul-de-sac, sacro-uterine ligaments, and the posterior surface of the uterus. Superficially located nodules of endometriosis may be the source of external bleeding, and thus confirm a suspected diagnosis. These may be encountered in the abdominal wall, the inguinal canal, the cervix, the vaginal vault, the rectovaginal septum, or on the vulva. Gross inspection within the pelvis of a patient who has endometriosis reveals the characteristic scarred, blood-filled discolored islands of endometriosis which are considered diagnostic.

The diagnosis of endometriosis is easy. Let me illustrate by the following case report:

Case 1.—R. W., a thirty-eight-year-old woman, was admitted to the hospital on March 8, 1949, and discharged on March 19, 1949.

Chief Complaint: Lower abdominal discomfort.

Present Illness: She had suffered pain during the past year. Dysmenorrhea had always been present but had increased in severity in the past few years. Menstrual periods had been regular at thirty-day intervals, lasting three days. She had had an acute episode with severe abdominal pain and distension a year ago, at which time she had been hospitalized and a left adnexal mass had been described. She had been married eight years and had never been pregnant.

Physical Examination: The patient was obese, the perineum intact, the cervix posterior, with the body of the uterus forward, normal in size and limited in mobility. A fixed cystic mass about 8 cm. in diameter was palpable in the region of the left ovary.

Laboratory: The urine was normal. Hemoglobin was 13 gm.; white blood cell count, 8,500, with a normal differential.

Operation: A left salpingo-oöphorectomy was done. The tube and ovary formed a mass adherent to the posterior surface of the broad ligament, extending from the lateral pelvic wall to the uterine horn. Upon the surfaces of the mass there were a number of hemorrhagic areas, and during the dissection small blood-filled locules were opened. Inspection deep in the cul-de-sac revealed some old blood with surrounding scar tissue producing fixation to both the rectum and the posterior surface of the uterus.

Pathological Report: Cystic ovary with tubo-ovarian adhesions. The blood-filled spaces as well as the tissue removed from the posterior cul-de-sac contained degenerated chorionic villi.

Final Diagnosis: Ectopic pregnancy, old. Residual inflammatory disease. Cystic ovary. No evidence of endometriosis.

This patient exhibited all of the characteristic symptoms and physical findings of endometriosis, and at laparotomy the gross appearance of the tissue confirmed that diagnosis. Actually, then, the diagnosis of endometriosis is often a difficult one to make. In many instances the history is suggestive but characteristic physical findings are absent. In other instances the patient may give no history of pain and still have a well-developed endometriosis. The possibility of endometriosis should be considered whenever either the history or physical findings suggests its presence. The frequency with which the diagnosis is correctly made will depend upon the routine consideration of this possibility and careful investigation of all patients with obscure pelvic complaints.

Pain is frequently the predominating symptom and may be difficult to evaluate, particularly when it is out of proportion to the physical findings.

Presented in Symposium on Endometriosis at the annual meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 11, 1949.

This situation is illustrated by the following case report:

Case 2.—E. C., a forty-one-year-old woman, para 2, gravida 2, was admitted to the hospital on March 4, 1949, and was discharged on March 31, 1949.

Chief Complaint: Abdominal pain.

Present Illness: Intermittent cramping pain in the right lower quadrant had had its onset a year prior to admission. The pain had been associated with menstrual periods and had been increasing in severity. In recent months the pain had been continuous. Intermenstrual spotting had been present for the two months prior to admission. Otherwise the menses had been regular at twenty-eight to thirty day intervals, lasting three to five days. There had been no change in the character of the flow. The referring physician had administered penicillin for three weeks antedating admission, with no relief of pain.

Past History: A thyroidectomy had been performed four years previously for a toxic goiter. Appendectomy and a left oöphorectomy had been performed thirteen years previously.

Physical Examination: There was localized tenderness in the right lower quadrant. The outlet was parous, with adequate support. The cervix was posterior, and the body of the uterus was forward, rather large and limited in mobility. The left adnexa were not palpable, but there was a sense of resistance in the right adnexa, with fixation and an indefinitely outlined mass.

Laboratory: The urine was normal. The hemoglobin was 13.5 gm.; white blood cell count, 7,300, with a normal differential.

Operation: Dilatation and curettage were done, with conization of the cervix, right salpingo-oöphorectomy, left salpingectomy, and subtotal hysterectomy.

Pathological Report: Endometriosis of tube and ovary. Leiomyomata of the uterus. Chronic cervicitis.

Course: The patient was discharged on the tenth postoperative day in good condition, only to be readmitted two days later with a small bowel obstruction. A Miller-Abbott tube failed to relieve the obstruction. Laparotomy revealed a loop of small intestine adherent in the pelvis. Subsequent course was uneventful.

Abnormal bleeding may be the predominate symptom of endometriosis. Bleeding may occur at an age period when other causes for bleeding are more frequently encountered. This situation is illustrated by the following case report:

Case 3.—M. U., a forty-nine-year-old woman, para 2, gravida 2, was admitted on April 27, 1949, and discharged on May 7, 1949.

Chief Complaint: Excessive vaginal bleeding.

Present Illness: There had been hypermenorrhea during the past two and a half years, increasing in amount in the last six months. There had been irregular bleeding for three months. Dysmenorrhea had always been present and had recently increased in severity.

Past History: The latter of two deliveries had occurred eighteen years previously. Bilateral salpingectomy had been performed twelve years ago.

Physical Examination: The parous outlet showed a mild relaxation. The cervix was posterior. The corpus was slightly enlarged with bilateral fixed adnexal masses adherent on the posterior surface of the broad ligaments. Fixation extended into the cul-de-sac. On the anterior lip of the cervix was a bluish nodule 3 mm. in diameter.

Laboratory: Urine was normal. The hemoglobin was 7.3 gm.; red blood cell count, 2,900,000; white blood cell count, 8,000, with a normal differential.

Operation: Dilatation and curettage were done, with conization of the cervix, subtotal hysterectomy, and bilateral oöphorectomy.

Pathological Report: Endometriosis of the cervix and both ovaries, with multiple bilateral chocolate cysts. Normal uterus, chronic cervicitis.

Surgical procedures are often the most satisfactory solution for patients with endometriosis. The importance of conservative surgery cannot be overestimated. Conservation of the childbearing function is indicated whenever pregnancy is desired although relatively extensive processes may be present. The following case report demonstrates the possible result in such situations:

Case 4.—P. S., a thirty-six-year-old woman, para 0, gravida 0, was seen in September, 1942.

Chief Complaint: Right lower quadrant pain.

Present Illness: Attacks of right lower quadrant pain had occurred during the past year, usually during the week preceding the menses. There had been moderate dysmenorrhea with little increase in severity. Menses had been regular, of the twenty-eight day type, lasting four days. She had been married for six months.

Past History: General health had been good.

Physical Examination: The perineum was intact, the cervix posterior, the corpus forward, and small leiomyomata were palpable. The right ovary was enlarged, forming a firmly fixed mass, 6 to 10 cm. in size.

Operation: A right salpingo-oöphorectomy was performed, and three subserous leiomyomata were removed from the uterus. A routine appendectomy was also performed.

Pathological Report: Endometriosis of tube and ovary, with chocolate cysts. Multiple leiomyomata. Normal appendix.

Subsequent Course: Spontaneous abortion occurred at four and a half months' gestation, with the cause unknown, on September 18, 1943. A term delivery of a normal infant occurred on December 14, 1944. Examination one year post partum showed an enlargement and fixation of the left ovary, with tenderness behind the cervix.

Even though patients such as this may require subsequent pelvic operation, less radical procedures are certainly justified. In many instances

subsequent operations are not necessary. The possibility of pregnancy occurring after resection of even extensive unilateral masses cannot be denied. When involvement is predominately unilateral, subsequent pregnancies are quite frequent.

Endometriosis does occur in young individuals in whom there has been no preceding infertility. This is illustrated by the following case report:

Case 5.—H. C., a twenty-three-year-old woman, para 1, gravida 1, was seen on March 14, 1949.

Chief Complaint: Pain accompanying periods.

Present Illness: A normal pregnancy with delivery had taken place three and a half years previously. There had been no previous infertility. Pregnancy had been desired during the past year. Her general health had been good. Severe cramping, rectal pain had accompanied her periods during the past year and a half. Menses had been regular, at twenty-six to twenty-eight day intervals, lasting five days and with normal flow.

Physical Examination: There was good perineal support. The cervix was posterior, the corpus forward and normal in size. The right ovary was large, cystic and fixed. The left ovary was normal. Severe tenderness was present on the left and behind the cervix, and was exaggerated by moving the cervix. There was a fixed tender nodule, palpable on rectal examination, in the region of the left sacro-uterine ligament.

Clinical Diagnosis: Endometriosis.

Although this diagnosis has not been proven, it is certainly to be strongly suspected. A patient such as this presents a very definite problem and one which may be difficult of solution. If the presumptive diagnosis is correct, the chance of pregnancy occurring is minimal. A prolonged period of observation is not indicated. If the desired pregnancy does not occur in a few months, surgical exploration and resection of the endometriosis is the recommended procedure.

The medical management of endometriosis is at best temporary and unpredictable. Two types of hormonal therapy have been suggested and some good results have been reported following each.

The use of male sex hormone is based upon its recognized effectiveness in producing atrophy of endometrial tissue. This occurs in the extrauterine endometrium as well as in normally located endometrium. A decrease in symptoms may well follow its administration, but it is to be expected that activity of the endometrial nodules will occur with the resumption of ovarian activity following cessation of its administration. Masculinization may be produced by the prolonged administration of an amount of testosterone sufficient to produce alleviation of symptoms and decrease in size of masses. This is important and cannot be predicted. In order to decrease this possibility, dosages should certainly be less than 150 mg. per month.

The other type of hormonal therapy that has been suggested is the administration of stilbestrol. The use of stilbestrol is based upon the occasional observation of improvement of endometriosis during the course of pregnancy and upon its known ability to control bleeding. It is doubtful whether permanent cessation of function in endometrial nodules can be produced without at the same time interfering with the ovarian cycle. Insufficient data is available at present to justify conclusions concerning this type of therapy. There is, however, no evidence of any permanent damage associated with its exhibition.

Irradiation is another type of therapy which may be successful. Unquestionably sufficient irradiation to stop ovarian function will be associated with the cessation of symptoms and atrophy of the nodules of endometriosis. This amount of irradiation therapy is less desirable in many instances than surgical removal, particularly when incomplete surgical removal can preserve ovarian function and and the child-bearing capacity. Irradiation may, however, offer a satisfactory approach to the problem in those instances in which extensive endometriosis makes surgical removal technically hazardous. It may also prove to be a satisfactory type of treatment for those patients in whom previous operative procedures have been followed by recurrence of symptoms and continued growth of the endometriosis. It is recommended as satisfactory treatment in patients in whom endometriosis has involved the bowel and in most reports is considered preferable to bowel resection. In a number of reported patients amounts of irradiation insufficient to produce permanent cessation of ovarian function have been followed by satisfactory results. On the bases of these reports and the frequency with which pregnancy has followed such therapy, this possibility should be seriously considered.

It is to be noted that in none of the four patients reported was the uterus retroverted. The frequency with which a retroversion of the uterus is encountered in patients with endometriosis does not mean that it is necessarily a factor in the production of endometriosis. The retroversion

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SURGICAL ASPECTS OF THE MANAGEMENT OF ENDOMETRIOSIS

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THE TREATMENT of endometriosis is a real challenge to surgical judgment. Years ago, radical operations were performed in essentially all cases of adenomyosis and endometriosis, including frequent bowel resections. Finally it was observed that these lesions were influenced by an ovarian hormonal stimulus. What was the result of this endocrine observation? Treatment was then directed toward ablation of ovarian function, either by surgical removal of the ovaries or by irradiation.

For several years there has been no real contribution to the treatment of endometriosis. It has been known for years that ablation of ovarian function, either by surgical removal of the ovaries or radiation therapy to the ovaries, affects endometrial growth. However, I wish to emphasize that we are now in an era in which conservative treatment is being emphasized, and justly so, as the guiding principle in the treatment of this complication.

The radical operation should mean, primarily, the removal of both ovaries, with or without hysterectomy, but including any other surgical procedures that may be necessary. The permanent ablation of ovarian function by irradiation in the treatment of endometriosis is radical.

The conservative operation means the preservation of ovarian tissue, associated with such other surgical procedures as deemed necessary.

Treatment will depend upon the age of the patient, social and marital status, type and severity of symptoms, patient's desire for children and the extent of the lesions relative to both genital and associated pelvic organs. It is of prime importance that resection of one or both ovaries may be indicated and that the reduction in ovarian secretion and endometrial stimulation produces a favorable therapeutic response in the endometriosis and symptomatic relief. The removal of one ovary with the resection of the remaining ovary may produce comparable results.

In addition, it is significant that one-half or even one-third of an ovary maintained by a good blood supply is adequate to preserve the reproductive function as well as have a favorable effect upon the endometriosis. Then, too, partial ovariectomy may improve fertility.

A substantial statement to remember in the treatment of endometriosis would be: "The younger the patient, the more rigidly should conservatism in treatment be carried out." Women over forty years of age are best treated by either radical operation or radiation therapy. In this group it is probably better to err on the radical side. Under forty years of age, conservative treatment becomes a paramount consideration.

Now let us take another aspect of the situation, and recognize that this disease is unfortunately most common during the third and fourth decades of life when it is not desirable to do either a radical operation or irradiation on account of the interruption of ovarian activity, with its artificial menopause and the loss of child-bearing ability.

The treatment of endometriosis is simple when the indications are clear for arresting the secretory function of the ovary, either by surgical removal of the ovaries or by the use of x-ray or radium. It must be admitted that uniformly good results are obtained when patients are submitted to radical treatment. However, in repetition, objections to this treatment are certainly found in the loss of menstrual function and child-bearing ability, and the psychic effect in a young woman may be catastrophic.

Stevenson states so aptly, "Treatment of primary endometriosis involves a contradiction between what the surgeon would wish to do and what for various reasons he must do. His chief object is to relieve the patient of symptoms, chiefly pain and abnormal bleeding. In a smaller number of cases correction of sterility may be his chief object. In any event, he wishes to preserve her sex life. Yet the only certain cure, in light of present knowledge is the removal of ovarian tissue, which provides the impetus to menstruation and is the fundamental cause of the symptom complex." I feel that the foregoing

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quotation certainly summarizes, in part, the surgeon's dilemma when faced by the lesions of endometriosis.

The previous statement as to treatment is contingent upon widespread involvement of the endometriosis, including all or any one of the following: the cul de sac, rectovaginal septum, regional pelvic organs, intestines, and peritoneum. Otherwise in widespread involvement, even though the patient may be young, ovarian resection cannot always be done because ovarian identification is impossible.

Pregnancy is definitely reduced when this disease is present, but is sufficiently high to warrant conservatism in treatment, which includes surgery. Payne reported that 25 per cent of his married patients subsequently became pregnant following conservative operation. Counsellor reported 13 per cent, and Holmes, 12 per cent. Patients desirous of becoming pregnant should have conserative treatment because they can and do become pregnant.

An emphatic warning may be given at this point, that the diagnosis may be difficult, both by digital examination and co-ordination of signs and symptoms, and frequently malignancy must be ruled out. Patients should not be treated blindly with irradiation or hormonal therapy or by any other treatment until a correct diagnosis is made. Certainly surgical exploration is preferable when there is any question as to diagnosis. A correct diagnosis can be established at the operating table, which certainly benefits both the patient and the surgeon and results in appropriate treatment. The peritonescope and culdoscopy may be useful adjuncts in diagnosis.

Frequently, endometriosis is extensive, producing what is commonly spoken of as a "frozen pelvis," involving the rectal wall and other pelvic structures. In these cases, radical operation and bowel excision were formerly practiced. The mortality was high in this type of surgery, and rectovaginal fistula frequently occurred. In present-day treatment, surgical castration with hysterectomy is the procedure of choice, resulting in atrophy of the remaining endometriosis, even though it may involve bowel and bladder. If such a surgical procedure is not applicable or advisable, then the patient's abdomen may be closed and irradiation used. Surgical treatment in the massive endometrial involvement may be difficult because of adhesions and parietal and visceral peritoneal involvement, and there is danger of injury to the bowel, bladder and ureters. It is in these cases that considerate surgical judgment and limitations must be exercised.

When both ovaries are extensively involved, an ovarian resection is impractical, and then it is imperative to remove all ovarian tissue, including the tubes and ovaries. To the contrary, if a normal ovary is present and the patient is under forty, then it is justifiable to remove or resect the diseased ovary and leave the good ovary and tube and preserve the uterus.

Constricting lesions of the rectosigmoid and intestinal obstruction are frequent in this complication, and excellent results can be obtained by castration.

McGuff, Dockerty, Waugh and Randall of the Mayo Clinic feel that in an obstruction of the ileum the procedure of choice is a resection of the ilium with or without preliminary enterostomy and with or without panhysterectomy. E. L. Zander and his associates report three cases of endometriosis which caused small bowel obstruction. Personally, I have had no experience with this type of small bowel obstruction.

We should all be in agreement with the fact that biopsy, frozen sections, and confirmation of the clinical diagnosis in all cases of endometriosis obstructing the bowel are the important procedures in excluding both carcinoma and inflammatory lesions.

Recently in the Wisconsin General Hospital, a patient was operated upon, and a frozen section was diagnosed as carcinoma, but later by permanent section a diagnosis of endometriosis was made. This patient, unfortunately, had a resection of the bowel, and she was subsequently treated by x-ray. The importance of this mistake is that frozen sections at times may be difficult to diagnose and may be misleading, but this does not in any way detract from the importance of carrying out this procedure.

Endometriosis during pregnancy, though rare, has been reported in recent literature and may demand appropriate surgical treatment.

Frank and Geist report that postmenopausal endometriosis is insufficiently emphasized in the literature and that typical lesions are frequently found in women past the menopause. It is suggested that extra-gonadal, possibly adrenal,

sources of estrogenic steroids supply a stimulus permitting decelerated growth. They suggest that the menopausal state is not invariably one of complete estrin deprivation. I would like to call attention to the fact that endometrial hyperplasia associated with estrin activity is often found in menopausal women. There is no evidence in these studies or in the literature to indicate that this process can originate *de novo* after the climacteric or even persist in active symptom-producing growth. However, this process may not be a primary surgical problem except in association with prolapse, fibroids, et cetera.

Resection of the superior hypograstic plexus or presacral nerve of Cotte has been advocated in endometriosis. This procedure should be used only in cases of adenomyosis because the endometriosis involving the pelvic ligaments and parietal peritoneum is not innervated by the superior hypogastric plexus or presacral nerve. Willard Cooke has recognized this and carries out ovarian neurectomy to relieve ovarian pain, by cutting the infundibulo pelvic ligament—the best way to section the sympathetic nerves to the ovary. Interference of the blood supply to the ovary should be avoided. It is certainly much more reasonable to expect relief from this method than by removal of the superior hypogastric ganglion.

Endometrial lesions in the umbilical region, in abdominal scars and inguinal regions are infiltrating lesions and should be widely excised.

Hormonal treatment of endometriosis must be considered in its relation to surgery. Such treatment inhibits pituitary ovarian function and produces temporary changes with occasional permanent changes.

Miller reports that the androgens (testosterone propionate) reduce the activity, vascularity and size of the lesion, and as a result operation can be performed with less danger.

Hirst feels that large amounts of testosterone propionate for the conservative treatment of endometriosis have a rational basis where radical measures are contraindicated or refused.

Schmitz feels that androgens can be used in younger people with minimal lesions to carry these patients as long as possible before instituting more severe procedures.

I have been hesitant in using the androgens because of the fear of producing irreversible masculinizing changes in the patient. Such changes have resulted from even extremely small doses, as others have reported.

Massive doses of stilbestrol have been given by Karnaky and others in the treatment and cure of endometriosis, thereby avoiding operation.

My experience with hormonal therapy has been so limited in this complication that any expression on my part would be worthless.

In conclusion, I wish to emphasize I have not hesitated to give deep x-ray therapy in cases of endometriosis with or without massive involvement, and even in those cases with bowel and bladder involvement, when indicated over operation.

This presentation has been worthwhile if my plea for conservatism in the treatment of endometriosis is heeded. The factual information presented has been based mainly upon my own experience, over a period of twenty years, in the treatment of endometriosis.

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TRAUMA TO THE NERVOUS SYSTEM

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THE history of the development of our knowledge of the care and treatment of individuals whose nervous systems, central or peripheral, have been injured, parallels very closely the history of war. During and following each conflict the mass of clinical material furnished by weapons ranging from the naked fist to the atom bomb has stimulated rapid strides forward in our knowledge of this subject. The more global the conflict and the more numerous the injuries, the greater will be the co-ordinated progress in their treatment. As long as man fights he will cause and receive injuries—not instantaneously fatal—to his nervous system. As long as such injuries are received there will be interested men available and stimulated to convert an otherwise hopeless loss into a means of furthering our knowledge and perfecting new skills in the management of these injuries.

It is not a coincidence that our three speakers today were all in military service and that two of them are at present primarily active in veteran's medical care.

Between wars, progress in the field of nervous system trauma is, by comparison, slow and erratic. And yet, there is no lack of clinical material in peacetime. The drunken driver, the motorcycle and airplane, the shallow diving pool, the step-ladder and, in the midwest, a great variety of farm equipment—as well as many other natural forces and human gadgets—assure us a constant and all too massive volume of injuries. If it is not the greater number of cases, what then accounts for the more rapid evolution of our knowledge of the effects of nervous system trauma in war as compared to peace? I think the answer lies in the concentration of this clinical material into centers in a way that can never be done in peacetime. A relatively small number of doctors receive the opportunity of treating enormous numbers of cases and thus accumulate a concentrated experience which would not be possible in any except a wartime setting. Military necessity and convenience demand the grouping of patients with similar disabilities into centers under the care of a rather limited group of men—the resulting benefit to medical progress is a by-product which is no less welcome for being unplanned. It has been estimated that 65 per cent of patients with craniocerebral trauma are treated in localities where no neurosurgeon or neurologist is available. Rare indeed, in contrast, was the military casualty with an injury to his brain, cord or peripheral nervous system, who did not eventually spend considerable time in a neurological-neurosurgical center. It would be impossible in civilian life to carry out a program of study for the control of traumatic convulsive disorders as was done at Cushing General Hospital in Massachusetts, or to collect for treatment on a single service a group of 100 to 200 paraplegias, as was done in several centers. The Peripheral Nerve Registry, established by the Surgeon General in 1944, is affording a means of following nerve injuries in large numbers to their final result in a way that would be totally impossible with a comparable group of civilian injuries widely scattered over the country. I think it is a safe assumption that the majority of the personal experience of each of our speakers in his respective subject has been gained in military service and a lesser part in the study of civilian injuries. I feel quite sure that during my own comparatively limited tour of duty, I had an opportunity of examining more patients with craniocerebral trauma than I will see in the remainder of my practice, barring another war.

Speaking in very general terms it seems to me that the outstanding contributions of the second World War to the subject of nervous system trauma are three: The first is the development of factual knowledge in neurophysiology and the availability of new antibiotic and bacteriostatic agents, which have in turn made possible the tremendous strides in new surgical techniques and skills about which we are to hear this afternoon.

The second contribution is a rather subtle change in our entire philosophy concerning the subject. This is most simply exemplified by the designation of a recent series of papers by Dr. John Aita of Omaha bearing the significant title, "Men with Brain Damage." It is a realization of

Introductory remarks in Symposium on Trauma to the Nervous System presented at the annual meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 9, 1949.

the fact that our responsibility to the patient does not cease with a successful cranioplasty or laminectomy or peripheral nerve repair. It is not only the attempt to restore function to as nearly a normal state as possible but also to develop the use of unaffected muscles or nerves or skills to substitute or compensate for permanent defects; to learn new vocations when a disability makes the previous one impractical; and to develop as complete a physical and mental adjustment as possible within the limitations imposed by the effects of the injury. It is everything that is implied by the word "rehabilitation" in its broadest sense.

The third contribution of World War II is the realization of the fact that the state of our knowledge, or lack of it, today is such that one physician alone is unable adequately to meet the requirements for the total management of a patient with an injury to his nervous system. As a result, we have seen the development in large centers of coordinated teamwork between doctors concentrating in one particular phase of the total problem. The neurologist and neurosurgeon have been greatly aided by the speech therapist in head injuries; the genitourinary surgeon in paraplegia and the neurophysiologist in dealing with peripheral nerve injuries, to mention only a few. In all three types of trauma the growing specialty of physical medicine and, of course, the ubiquitous psychiatrist are making important contributions.

It may seem paradoxical in view of these present attitudes of considering the total assets and liabilities of a man with an injury to his nervous system and of the special fields involved in their proper management to divide this discussion of trauma along traditional anatomical lines: the brain, the spinal cord and the peripheral nerves. One might instead have had a neurosurgeon, a psychiatrist and a physiotherapist discuss the entire field of nervous system trauma, each from the standpoint of his own particular contribution. In defense of the anatomical arrangement of presenting the subject today, it must be pointed out that the prolonged process of re-education and rehabilitation cannot be most effective or efficient unless every possible effort has first been made to restore disturbed function to as nearly normal a state as possible. Furthermore, both the immediate and later management of injuries to the three divisions of the nervous system are so entirely different, one from the other, that to consider them in any manner other than as separate anatomical groups could serve only to confuse further an already difficult problem.

MANAGEMENT OF ENDOMETRIOSIS

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may just as well be a result of the development of endometriosis. It may also be an incidental finding. The presence of a uterus in normal position does not prevent the development of endometriosis and should not be considered as a factor in the diagnosis.

In many instances, endometriosis is diagnosed at the time of laparotomy, and the frequency with which such diagnoses are made depends upon how carefully the pelvis is inspected and how frequently suspected islands are removed and preserved for microscopic examination. Many of these are early endometriosis and are without clinical symptoms. They represent instances of endometriosis beyond the scope of the present discussion. When recognized, such nodules should be removed and in this way potential future difficulty prevented.

The proper management of endometriosis remains a difficult problem just as does its initial diagnosis. The physician who looks for it, who considers it as a possibility in every gynecologic examination and who treats it conservatively, once the diagnosis has been made, is to be commended.

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SPINAL CORD INJURIES

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THE PROBLEM which confronts the neurosurgeon and the orthopedist in any acute injury of the spinal cord is but a small one compared to the over-all responsibility of returning this patient to his former position in society. Close teamwork among many specialized groups is necessary for medical, vocational, social and economic rehabilitation. It is true that many patients who have received permanent injury to the spinal cord must rely on the care and treatment of one doctor, or one limited group, but to these patients must be applied the principles of the treatment through many therapeutic fields before the end result is reached. The work of urologists, dietitians, physical therapists, occupational therapists, social welfare workers and nurses, the matter of vocational training, and finally the program for economic adjustments for living must be organized in such a way that the individual patient is rehabilitated to the maximal extent permitted by his disability.

The average medical practitioner does not have the time, nor will many take the time, to read a lengthy treatise on a subject of this magnitude. It is therefore fitting for me to refer to the best clinical review of the problem that I know of and hope that this will cover the major material, leaving a few important items for me to emphasize at this time. I refer to Technical Bulletin 503 of the Veterans Administration on "Spinal Cord Injuries,"[2] compiled by Dr. Ernest Bors, which is an over-all review of the situation, with references to the important contributions of, and the end results following, World War II. It is up to date, concise and presents the problem as I see it today.

The fact that 80 per cent of the patients with spinal cord injuries sustained in World War II survived and returned to the United States, with a mortality rate of only 2 to 8 per cent reported since hospitalization in this country, speaks well for (1) the teachings and training of the medical profession up to the time of the war, (2) the improved techniques in treatment and transportation and (3) the major role of antibiotics. The military training of a large group of young medical men will be strongly felt in every community when the care of any given spinal cord injury is needed. The general principles of therapy are put to work on a large scale in any major military conflict, and the tried and proved methods are available until another war comes along, when better methods may be used.

As in all types of injury, the treatment of injuries of the spinal cord should perhaps start with means of prevention of injury. Under this should be considered educational motion pictures in the schools, colleges and community theaters, displaying what can happen by careless driving of automobiles and airplanes, by diving in shallow water or in the surf, by unprotected participation in strenuous athletic events, by improper use of firearms, and lastly, by failure to practice moderation in the daily routine. In spite of all these measures, many patients with irreparable damage to the spinal cord are seen in every hospital in the United States, and the knowledge of their care should be of the best pattern. Doctors should realize that diagnostic spinal punctures on patients with cervical cord tumors or increased intracranial pressure are often performed at a risk of further damaging the functioning nerve fibers. Also, induced convulsive seizures as used in treating many mental disorders demand the respect of a supposedly strong spinal column. To no part of one's anatomic structure is the adage "an ounce of prevention is worth a pound of cure" more applicable than to the spinal cord.

The doctor should consider it his responsibility to visit the local boy scout troops and instruct these young boys in the transportation of a person who has sustained a broken neck or a broken back. The scout manual is an excellent guide and should be supplemented by proper demonstrations. The use of a simple head sling for traction can also be demonstrated.[9] A real problem arises in the careful transportation of any person with a spinal injury, whether it is compound or simple, or whether it is associated with partial or complete paralysis. As a general rule, the deformity will be one of flexion, and any position to prevent

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further flexion, such as gentle extension, may be considered important.

At the hospital, permanent traction by use of Crutchfield's tongs[4-6] or any of the other means of traction[1,3,7,10,13-15] will probably be necessary for cervical fractures. The problems of shock and other concurrent injuries of serious magnitude are faced at once. If the general condition of the patient is good, and neurologic and roentgenologic studies indicate that a progressive compression of the thoracic or lumbar parts of the spinal column can be relieved by laminectomy, this should be done. The cervical injuries are best treated by traction for at least a week and operation delayed until after this time, as a greatly increased mortality rate is known to be associated with early cervical exploration. Although many patients have been treated in the early phase of the injury, Munro[12] has shown 30 per cent better results by waiting, as far as mortality is concerned. Late operations for arachnoidal adhesions or block[11] and for various types of pain, either root, sympathetic, splanchnic or psychic, can be considered.[2] The problems of using braces and of spinal fusion by orthopedists to prevent collapse and absorption of the vertebrae can be weighed at time of operation (Figs. 1 and 2), or if an operation is not performed, the use of braces can be considered after evidence of callus formation and partial healing (four to six weeks) is observed. All the sequelae such as decubitus ulcers, neurogenic bladders and nutritional deficiencies must be controlled.[8] The rehabilitation is a slow but steady one in the hands of the best therapists and demands the utmost co-operation between patient, relatives and social forces at work in the community. It is possible to accomplish a great deal in most of the spinal cord injuries seen today; however, even though the individual will live perhaps a normal life span with excellent care, the fact must not be lost sight of that a person with permanent damage to the spinal cord will be handicapped for life and that an uphill fight to overcome the disabilities is always present as adjustments are made in the community so that an independent social and economic existence is assured.

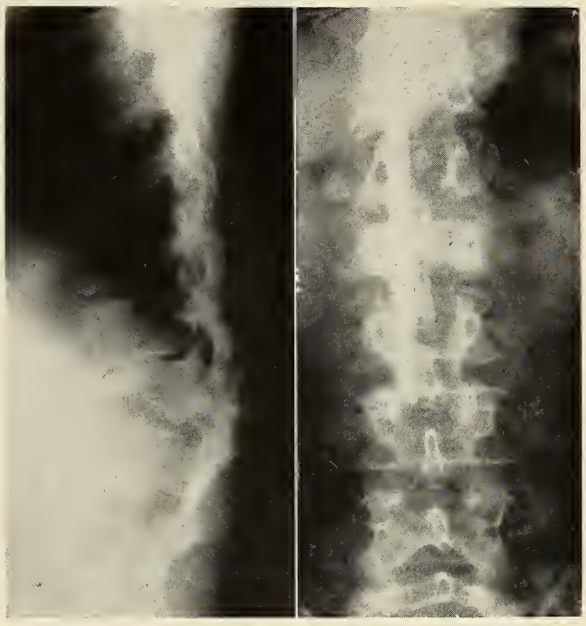


Fig. 1. *(left)* Compression fracture of the first lumbar vertebra.

Fig. 2. *(right)* Unilateral bone graft associated with laminectomy in compression fracture of the first lumbar vertebra.

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TECHNIQUE OF PERIPHERAL NERVE SURGERY

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THE EXPERIENCES with peripheral nerve surgery in World War II have logically laid the groundwork for all future civilian practices—*until the next war.* These lesions are so relatively infrequent in civilian life that no single individual can hope to accumulate enough data to change radically the present concepts which have been tested upon many thousands of cases. Not that the present treatment policies are perfect—far from it—yet the results of treatment of some 20,000 peripheral nerve casualties by several hundred neurosurgeons have been better, from the standpoint of functional recovery, than any heretofore known.

It is extraordinary how frequently nerve lesions are overlooked, even by physicians who are otherwise highly trained in the management of trauma. No doubt this is due to the surgeon focusing his primary interest upon the fractured bone, the mutilating soft tissue wound or the emergency accompanying major vascular injuries. Once the damaged extremity is encased in a plaster cast, the associated nerve injury may go unrecognized for weeks or even months. It has been established beyond reasonable doubt that the early repair of severed nerves yields the best functional results. Therefore, it becomes mandatory that the nerve injury be recognized by the surgeon who first treats the patient.

Complicated clinical and laboratory examinations are not necessary in recognizing the more common nerve injuries. As an example, the integrity of the main nerve trunks of the upper and lower extremities can be evaluated with considerable accuracy by studying the movements of the thumb and great toe.*

Upper Extremity

Median Nerve.—A certain position of the thumb cannot be reproduced when the median nerve is interrupted proximal to the wrist. The first metacarpal is flexed at the wrist, a motion primarily accomplished by contraction of the opponens pollicis. In addition, the distal phalanx of the thumb is extended on the proximal and the whole thumb is rotated inward so that the palmar surface of the distal phalanx opposes the palmar surface of the other digits. This position can be reproduced only with good contraction of the abductor pollicis brevis and the outer head of the flexor pollicis brevis. These three muscles are supplied through a muscular branch of the median nerve which arises just distal to the annular ligament. If the thumb can be maintained in this position, no other examination is necessary to establish the functional integrity of the median nerve.

Ulnar Nerve.—Likewise a certain position of the thumb cannot be maintained when the ulnar nerve is interrupted proximal to the wrist. The first metacarpal is held in the plane of the other four. The proximal phalanx of the thumb is slightly flexed and is pulled toward the metacarpal and metacarpophalangeal joint of the index finger. This function can be tested readily by the patient's ability to hold a stiff piece of paper when an attempt is made by the examiner to withdraw it.

The muscles which produce this action are the adductor pollicis and the inner head of the flexor pollicis brevis. These two muscles are supplied by the terminal muscular branches of the ulnar nerve within the palm. If this position of the thumb cannot be held in the absence of local injury, further examination is unnecessary to establish functional impairment of the ulnar nerve.

Radial Nerve.—The following position of the thumb cannot be maintained if the function of the radial nerve is interrupted proximal to the wrist: The first metacarpal is directly abducted at the carpometacarpal joint in the plane of the palm. The proximal and distal phalanges of the thumb are both held in extension. This position is made possible by contraction of the extensor pollicis brevis aided by the weaker abductor pollicis longus. These two muscles are supplied in the hand by the terminal muscular branch of the posterior interosseous division of the radial nerve. If this position of the thumb cannot be maintained

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*The monograph of Haymaker and Woodhall, "Peripheral Nerve Injuries, Principles of Diagnosis," is an indispensable volume for those dealing with peripheral nerve injuries. All of the most useful clinical tests are meticulously described and explained by anatomical descriptions, photographs and drawings.

in the absence of local injury, further examination is unnecessary to establish functional impairment of the radial nerve.

The radial nerve is most likely to be injured in the upper arm, and when this is true, confirmatory evidence is found in the hand by inability to extend both the proximal and distal phalanges of the thumb, a function accomplished by contraction of the extensor pollicis longus. Also, inability to extend the first phalanges of the other digits on the metacarpals results from paralysis of the extensor digitorum communis. Both of these muscles are innervated by muscular branches of the radial nerve in the proximal third of the forearm. Care must be taken not to confuse extension at the metacarpophalangeal joints with extension at the interphalangeal joints since the latter is a function of the lumbricales and interossei.

Lower Extremity

The intrinsic musculature in the foot is not developed to the same extent as in the hand so that reliable observations must be limited to simple contractions of the long flexors and extensors of the toes or else include movements of the entire foot. Fortunately, injuries of the lower extremity which involve peripheral nerves are commonest high in the thigh and about the knee. In the former location either or both divisions of the sciatic nerve may be involved. In the latter the common peroneal nerve is damaged most frequently. Because of this, examination of the toes will give valuable information in the majority of lower extremity wounds. The only common nerve injury apt to be missed if careful study of toe motions is made is the posterior tibial nerve in fractures and shrapnel wounds of the lower third of the leg. In this lesion only the intrinsic musculature of the foot is paralyzed, and very little disability results except that which may follow anesthesia of the sole of the foot.

Common Peroneal Nerve.—The following described position of the great toe cannot be reproduced if there is interruption of the common peroneal nerve or its deep branch proximal to the middle of the lower leg: The terminal phalanx is extended on the proximal and the latter is extended on the first metatarsal. This action can be produced only with good contraction of the extensor hallucis longus whose tendon can readily be palpated over the dorsum of the first metatarsophalangeal joint. It is supplied by the deep branch of the common peroneal nerve in the proximal third of the lower leg. If this position of the toe cannot be maintained in the absence of local injury to the tendon or the toe, further examination is unnecessary to establish functional impairment of the peroneal nerve.

If the entire foot can be examined satisfactorily, further evidence may be obtained by inability to dorsiflex the foot at the ankle (foot-drop). These functions are accomplished, respectively, by the tibialis anticus and the peroneus longus and peroneus brevis which are innervated by branches of the common peroneal nerve arising in the proximal third of the lower leg.

Tibial Nerve.—The following position of the great toe cannot be reproduced if there is interruption of tibial nerve function proximal to the middle of the lower leg: The terminal phalanx of the toe is flexed on the proximal and the latter is flexed on the first metatarsal. This action can be produced only with good contraction of the flexor hallucis longus and flexor hallucis brevis. These muscles are supplied by the tibial nerve in the proximal third of the lower leg. If this position of the toe cannot be maintained, in the absence of local injury to the tendon or the toe, further examination is unnecessary to establish functional impairment of the tibial nerve.

If the entire foot can be examined satisfactorily, further evidence may be obtained by inability to plantar-flex or adduct the foot at the ankle. These functions are accomplished, respectively, by the gastrocnemius group and the tibialis posticus which are innervated by branches of the tibial nerve arising in the proximal third of the lower leg.

Indications for Operation

Preoperative clinical and laboratory studies of motor, sensory and vasomotor functions will indicate usually the degree of physiological disruption of a peripheral nerve. However, there can be complete physiological loss of function without anatomical severance of the nerve. This fact explains the frequency with which injured peripheral nerves regenerate spontaneously. Because of the likelihood of spontaneous regeneration, the surgeons in World War I recommended a waiting period of from six to nine months before advising exploratory operations. However, more recent in-

vestigators believe that the degenerative changes which inevitably occur in nerve ends and in the denervated muscles are progressive, and that the best results are obtained in those cases where repair is accomplished early. Therefore, waiting for spontaneous regeneration is unjustifiable.

The policy presently followed in our clinic is to explore all cases of peripheral nerve palsies, complete or incomplete, unless there has been rapid, progressive improvement of symptoms. If the nerve has been severed, valuable time has been saved by early repair. If the nerve is anatomically intact, freeing it from the surrounding scar tissue will usually hasten recovery, and seldom retard it. It is believed that exploration of any major nerve trunk under proper conditions can be accomplished without risk to life or to function.

The policy of radical exploration, however, should always be combined with one of conservative treatment once the nerve is exposed. Unless actual anatomical division can be demonstrated, or unless the intrinsic scar is so dense that no motor or sensory impulses can be demonstrated to pass through the scar, only complete neurolysis should be done. If a nerve thus treated fails to show evidence of regeneration within two months, re-exploration is done, and if there are still no sensory impulses passing through the scarred area, resection with end-to-end suture is undertaken.

All cases of suture—or neurolysis for that matter—should be observed carefully week by week for evidence of new functional activity. If at any time satisfactory progress seems to have stopped, re-exploration should be recommended.

The value of the Tinel's sign in diagnosis has been discredited by many observers because of the frequency with which percussion impulses can be transmitted through scarred soft tissue to a distant neuroma. If the percussing stroke is heavy, no doubt the jarring will invalidate it. The sign should be elicited by very gentle tapping with the finger tips along the course of the nerve, always working from below the lesion upward. At the point where tingling in the peripheral distribution is produced, functioning sensory fibers are believed to be present. The Tinel's sign when performed properly is a valuable one, especially in following the progress of regeneration after suture.

Much valuable information can be obtained by electrical stimulation of the exposed nerve trunks at operation, and therefore all operations upon peripheral nerves should be started at least under local anesthesia. Once the direct stimulation data have been obtained, a shift to general anesthesia may be desirable, particularly if the procedure is prolonged by the necessity for wide dissection and extensive mobilization of contiguous joints.

Electrical stimulation of the exposed nerve trunk is valuable in determining its anatomical continuity. Galvanic, faradic or sinusoidal current provided a satisfactory stimulus. The minimal current is that which will produce a visible contracture of muscle fibers when the electrodes are applied directly to them. The current should be increased four or five times above this minimal level before deciding that there are no functioning fibers passing through the involved segment.

If stimulation proximal to the scarred area causes contraction of muscles normally innervated by the nerve distal to the scar, it may be assumed that there is still anatomical and physiological continuity of the motor fibers.

If stimulation of the nerve proximal to the scar fails to elicit motor responses even with five times the minimal stimulus, it may be assumed that anatomical continuity is lost, providing the nerve has been liberated from its extrinsic scar prior to the test.

If the operation is conducted under local anesthesia and no procaine has been infiltrated into the proximal segment of nerve, information of great value can be obtained from the sensory responses. Stimulation of the scar or neuroma is always painful, more so than stimulation of normal nerve above the scar. Stimulation distal to the scar without sensory response indicates disruption of the afferent fibers unless the amount of current is excessive and overflows into the neuroma.

Sensory responses to electrical stimulation are valuable in cases of re-exploration after suture. Not infrequently, physiologically active sensory fibers can be demonstrated traversing the suture line before any motor fibers have reached their appropriate end-plates.

Selection of the Time for Definitive Nerve Surgery

In contrast to the progressive intraneural pathological changes which dictate in large part the upper level of the optimum time for nerve repair, the factors which contraindicate primary

nerve surgery in an injured extremity are entirely technical and mechanical.

1. The suture of a divided peripheral nerve at the time of wound debridement is not feasible by any technical standards, nor is it compatible with the surgical principles of preservation of life or the extremity, or of the prevention of infection, which must be dominant at this time.

2. It is often not possible for the surgeon to estimate the intraneural damage to nerve segments adjacent to the point of severance.

3. Selective section of nerve ends prior to suture is impossible unless a large nerve gap is arbitrarily established.

4. Mobilization and transplantation procedures essential for restoring the nerve gap and delimiting suture line tension are surgically unsound for fear of infection.

5. While in cleanly lacerated or in small penetrating wounds, immediate nerve suture might be carried out by flexion of contiguous joints, the results in cases in which nerve gap has been overcome by flexion alone are likely to be prejudiced both by joint contractures and by the adverse effect of postoperative stretch upon the suture line. Moreover, this method may not be applicable if the point of suture is distant from an articulating surface.

6. Finally, the epineurium of a freshly divided nerve is thin and friable and lacks the tensile strength to hold sutures.

In spite of this array of arguments, surgical opinion is by no means unanimously in favor of delayed nerve suture. On the other hand, the case for this plan has been well stated by Seddon: ". . . the delayed operation (in war wounds of peripheral nerves) converts the suture from a procedure carried out under restriction into one in which the surgeon is free to do as he wishes. At Oxford, all the primary sutures compare unfavorably with early secondary sutures, and if I had the misfortune to suffer a nerve injury myself I would prefer the secondary operation."

The practice of delaying operation to wait for evidence of spontaneous regeneration is indefensible. In the interim irreversible pathologic changes occur in the form of progressive degenerative changes in the distal nerve trunk, nerve endings and distal articulations, which impair and eventually invalidate the functional results of axonal regeneration. Furthermore, there is considerable evidence that these alterations impair nerve regeneration adversely in direct ratio to the length of time between the injury and the attempt at definitive suture.

A description of the entire gamut of changes in all the tissues of a denervated extremity is too complex a task to undertake here, and the emphasis will be directed to the most important alteration which occurs in the distal nerve segment.

The first evidence of changes leading eventually to deterioration of the distal nerve trunk throughout its entire extent is a slight fibrotic thickening of the epineurium, which occurs between fifteen and twenty-five days after severance of the nerve. Within this period the epineurium first attains the tensile strength which facilitates nerve suture. As time passes, the distal trunk exhibits two types of tissue reaction. The first type may be summed up in a single word—fibrosis. The epineurium becomes thicker and more dense. Collagenous tissue spreads diffusely in the interfascicular spaces. The normal cross-section area of the fascicles is diminished as the result of an enveloping perineural fibrosis which may progress to practical obliteration of the fascicular masses. Although the entire cross-area of the distal nerve trunk diminishes in size, the atrophy of fascicles is compensated for by a relatively greater ratio of interfascicular fibrosis. Simultaneously, with the fibrotic changes described, there may be seen an endoneural fibrosis, which at times almost replaces the attenuated groups of atrophic tubules.

The second major change in the distal trunk, which takes the form of tubule atrophy, can with some qualifications be readily associated with the lapse of time after wounding, although it is difficult to correlate exactly the fibrotic changes first described with the passage of time. Progressive tubule atrophy in uncomplicated nerve injuries may vary in severity from case to case, but it remains a stable measure of the duration of distal segment deterioration unless it is even more adversely influenced by the factors of ischemia or traction. The normal maturation of regenerating nerve fibers depends to a large extent upon the number and volume of these tubular spaces. Although the upper limit of potential functional regeneration cannot be fixed with certainty, it is a warrantable assumption, on the basis of this evidence, that it is within the three-month period following injury.

After Care

The operation is but a single phase of the treatment of an extremity paralyzed as the result of a peripheral nerve injury. Obviously, an extremity will be functionally useless, however satisfactory the nerve repair and subsequent regeneration may be, if temporarily denervated muscles are permitted to become irreversibly atrophied or fibrosed, or if the joints of the wrist, hand, ankle or toes are "frozen" beyond repair. For the best results it is, therefore, essential that physical therapy be employed both before and after operation.

Recent experiments and clinical studies have indicated that daily galvanic stimulation of denervated muscles will prevent atrophy and retard fibrosis, and this measure was, therefore, employed as a routine in all cases, beginning with fifteen brisk contractions daily and progressing gradually to thirty contractions. When casts were used for postoperative immobilization, windows were cut over the bellies of the paralyzed muscle groups and galvanic stimulation was begun the day after operation. Other measures included massage, active and passive motion, and the use of dry and moist heat as indicated. Particularly careful attention was given to the active and passive motion of small joints. Fixation by splints was kept at a minimum, detailed instruction of the patients in respect to the care of their own joints being considered more important than mechanical methods of fixation.

Results

Some 8,000 cases of nerve suture have been listed in the Army's Peripheral Nerve Registry. Most of these cases have had careful follow-up studies for periods ranging from six months to two years. A recent primary analysis of data indicates that in 85 per cent of cases there is unmistakable evidence of regeneration. Just how complete the ultimate functional recovery will be cannot yet be determined. Eventually, the answer will be forthcoming from the Registry, but fully two years must elapse before final evaluations can be made.

Apparently all peripheral nerves, regardless of their location, possess the same ability to regenerate, providing the surgical treatment is adequate and the operation performed during the optimal post-injury period. However, there is inevitable mixing of fibers at the suture line no matter how meticulous the repair. In nerves, predominantly motor, which supply muscles concerned with gross movements (radial and musculocutaneous) functional recovery is more perfect than in nerves supplying muscles concerned with fine precision movements (ulnar and median). In the latter group there may be excellent regeneration, yet the extremity remains functionally poor. Great improvement can be expected in patients who will co-operate fully in a re-educational program. The patient must learn to make use of muscles whose motor connections with the brain have been mixed up—just as the patient whose facial nerve has been anastomosed with the hypoglossal must learn to move his facial musculature through the hypoglossal pathways in the brain stem and cerebrum.

Sensory regeneration in a mixed nerve is less of a problem, for the anesthetized areas may function usefully although the central connections are bizarre.

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THE SURGEON AND THE CANCER PROBLEM

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THE SUBJECT I have chosen is not an easy one to discuss. There is so much to say and yet so little that we know about cancer. Cancer does constitute, however, a very challenging problem, as I believe everyone will admit. Our families know it. There probably is not a family in this city, in this state, that will not perhaps be touched in some manner by cancer: This is a rather serious thing to contemplate. Cancer strikes frequently and in all areas of the population; it takes its largest toll, however, among people over forty-five years of age.

What are we going to do about the problem of cancer? We know that we shall have the full endorsement of the public in any program which we undertake. Witness the generous response of the citizens of this and other states to the public subscription program of the American Cancer Society; the response of Congress in its liberal support of research is a reflection in turn of the intense interest of the public that preventative or curative measures for cancer will be found. Witness also the great interest of the public in cancer detection. On this score, it is only fair to say that the attitude of the public on detecting the presence of cancer early by attendance at cancer detection centers has been more optimistic than that entertained generally by physicians in reference to this agency.

Cancer Detection Centers

A pilot Cancer Detection Center has been set up at the University Hospitals, sponsored by the Minnesota State Medical Society and supported by the Minnesota Division of the American Cancer Society and the National Cancer Institute of the United States Public Health Service. Dr. David State, the director of the Center, finds that approximately 1.2 per cent of patients over forty-five years of age presenting themselves for examination without symptoms have cancer. The most frequent site has been the alimentary tract, especially the colon and rectum. Moreover, it would appear from the findings of Dr. State and his associates that about 10 per cent of these patients have silent polyps or adenomas in the rectum or colon. Inasmuch as the majority of these lesions are probably precursors of cancer, it would appear that these findings alone fully justify all the effort involved.

Screening Tests.—The lamentable circumstance is that so much labor is involved in the detection of a single cancer. But who counts the cost of labor when life is at stake? A 1 per cent return does seem to be small remuneration, but is that not the current rate of interest on money deposited in our banks? Yes, there are those who have conclusively shown how impossible it would be to subject all persons over forty-five years of age to annual x-ray scrutiny of their stomachs. Our studies have shown that approximately 90 per cent of gastric cancers develop in patients who are achlorhydric or hypochlorhydric (less than 30 degrees free HCl) to histamine. This is a test which can be done in the physician's office. Annual routine application of gastric aspiration under histamine stimulation to patients over forty-five years of age would determine which 25 per cent (approximate number) should be submitted to x-ray examinations of the stomach.

Similarly, the demonstration of occult blood in the stool on application of the Guaiac test has proved a useful tool in indicating which patients should be submitted to x-ray examination of the colon. And the finding of polyps and/or adenomas in the rectum and lower reaches of the colon on proctoscopic examination has been so rewarding an undertaking as to suggest that every person should submit annually to this test. Moreover, patients exhibiting this finding should also be submitted to x-ray examination of the colon.

What is the alternative?—Those who decry the efforts of the Cancer Detection Center as not justifying the outlay of all the cost and labor suggest that we continue to examine only those patients who have symptoms. Do they not know that, in

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the alimentary tract, in any case, that cancer is a silent disease until approximately twenty months have passed? The evidence on this score seems quite satisfactory. The public looks to us as guardians of its health. Does the attitude of "wait until symptoms develop" suggest that we are mindful of our great public trust? To any of you who might feel inclined to hesitate and listen to the discouraging platitudes of the doubting Thomases, I say: Let us go forward; faith will follow.

Research

Research, to be certain, is the promise of the future. But what of the present? Are our fellow citizens placing so much money at our disposal for the formulation of a cancer program solely in the hope that the riddle of the cancer enigma will be solved? No, I do not believe that. There may be a few isolated persons who believe that money alone will amass brains, hands and ideas and dispel quickly the scourge of cancer. Most of us are not that sanguine. We know how slow and prodding is the process of new-fact finding. Yes, progress is being made, but I do believe that any program which places its emphasis solely on research with the suggestion that we continue as we have been doing until the nature of cancer is resolved is not in the public interest. Moreover, affecting not even the role of a minor prophet, I believe it is safe to say that it takes little imagination to anticipate such a program boomeranging upon its supporters. We must abstract out of what knowledge we have of cancer today every grain of useful information and use it to the best possible advantage in our wrestle with the problem.

It will be a great day in medicine when we know the nature of cancer and what factors bring it about. And if and when we learn how to prevent cancer, it will be an occasion for universal rejoicing. In the meantime, we have to content ourselves with lesser flights of hope. A biologic test for cancer would lessen enormously the labors of individual organ scrutiny which is at present the technique of the Cancer Detection Center. It is easy, even for a child, to ask questions which no one can answer. It is the mark of genius to ask a question which can be answered. It is such a succession of intelligent questions put to nature, for which answers can be found, that leads to the solution of a problem.

Cancer Is Curable

Figures are accumulating on every hand to suggest that cancer is curable. The problem is to recognize cancer while it is still a local disease. It is spread of cancer from the initial site of origin to the regional lymph nodes that is synonymous with a poor prognosis. Fifty per cent of patients who have gastric cancer and no lymph node involvement are cured by gastric resection. Yet how few those cases are! And why? Because we are dealing largely with patients who come following the development of symptoms. It is well that we deplore the circumstance that patients as a group neglect the onset of symptoms for a period of approximately six months before reporting for medical help. The more important consideration, however, is that most alimentary tract cancers are silent for approximately twenty months before symptoms develop. In other words, neglect of the knowledge of this circumstance is largely accountable for the delay. One can go through the list of common cancers, such as breast, uterus, colon and rectum, and the stomach; it is a uniform finding that cancer is curable when it is still local, but the cures drop sharply with the presence of demonstrable lymph node involvement.

Information compiled by various agencies suggests definitely that cancer is curable. The reporting of cancer cures has long been an activity of the American College of Surgeons. The labor involved in cancer registries is beginning to bear fruit, and at long last, we have one in Minnesota. Those of New York and Connecticut, which have long been active, are begining to give us useful information on cancer incidence and prevalence, as well as mortality. Just recently, Dublin (March, 1949) reported that of patients treated for cancer in the State of Connecticut in 1941, the five-year survivors number 33.5 per cent. When surgeons come to deal with a larger number of Group I or A cases (patients without lymph node involvement), obviously our accomplishment will be correspondingly greater.

Surgery Still the Mainstay of Treatment

There was a time when it was believed that irradiation would supersede surgery as the most reliable remedy with which to combat cancer. Gradually, however, we have awakened to the realization that it is only in certain restricted fields that irradiation holds out promise of relief to patients suffering from cancer. These are essentially: the

skin, certain intraoral cancers and the cervix. The Memorial Hospital in New York was at one time the keenest exponent of the employment of irradiation in the management of cancer. When one goes there now, he finds that this agent enjoys wide usage only in the treatment of intraoral cancer. Those who have some familiarity with papers emanating from that institution ten to twenty-five years ago, or those who had the opportunity of hearing their lamented nestor, James Ewing, extol the virtues of irradiation in the management of malignancy, know what a change in attitude has occurred at the Memorial Hospital with reference to the relative merits of surgery and irradiation in the management of cancer. Obviously, not everyone shares the sharp veering-about in attitude of the Memorial group. In most institutions, irradiation is still the therapeutic agent of choice in the management of cancer of the cervix uteri. It is only fair to say, however, that, more and more, it is becoming recognized that surgery is still the mainstay of present-day therapy in cancer.

In addition to irradiation, there are other helpful adjuncts. In certain malignancies hormonal treatment (estrogens for prostatic and breast cancer and/or androgens for breast cancer) and chemotherapy afford definite palliation. I have seen supraclavicular metastases disappear from a late cancer of the breast under estrogen therapy. Its administration deserves to be probed for the treatment of extensive lymph node metastases from other cancers. Timely, aggressive supplemental surgery may in some such instances convert palliative estrogen therapy into a more hopeful prospect for the patient.

Exploration of the value of chemotherapeutic agents in arresting cancer is being prosecuted in many quarters. Radioactive iodine in the control of cancer of the thyroid, nitrogen mustards in Hodgkin's disease and multiple myeloma, and radioactive phosphorus for certain leukemias—these and other chemotherapeutic agents will undoubtedly bring relief, temporary in most instances, to some cancer sufferers.

Replacement of the scalpel by intravenous injection would indeed be a great step forward in checking the cancer scourge. However, we must be realistic. For most cancers, the only reliable therapeutic agent is still the surgeon's scalpel. There was a time when the mortality of operation for cancer was an item of great concern to surgeons as well as patients. On this score, surgery has made great advances. Today, most standard operations for visceral cancer can be done at risks under 5 per cent.

Need of More Aggressive Surgery

It would be nice indeed if every cancer operated upon by the surgeon were a local lesion. Alas, if it only were so! Yet, if organ screening tests, of which we have some knowledge, were implemented to uncover patients who should be submitted to more detailed and precise organ scrutiny, the mere adoption of this policy of annual organ scrutiny for all patients over forty-five years of age would obviously bring a far larger number of patients with early local cancer for treatment. But who knows better than surgeons that merely wishing it so does not make it so? The proponents of inertia can only be overcome by the slow attrition of fact gathering.

In the meantime, the only manner in which the poor record of accomplishment can be improved is to deal more radically with the cancers as we encounter them.

Re-entry of Abdomen of Patients Presenting Lymph Node Involvement.—Some months ago, I proposed to my colleagues that we re-enter the abdomens of some of our patients after an interval of four to six months when the lymph nodes at the initial operation contained gross evidence of cancer. This procedure has been carried out on a few patients with Dukes' Group C colic cancer. I have the impression that by having a "second look" into the abdomens of such patients, to do a wiping-up procedure on cancer sprouts in lymph nodes not detectable at the first operation, we may improve our accomplishment in the large group of cases with lymph node involvement. From only a few preliminary skirmishes with this problem, I believe it is safe to say that, for certain cancers, this procedure may become standard practice. And if it does, the role of the surgeon in combatting cancer will become even more important than it is today. The more immediate concern for us to cogitate on now, however, with reference to that item is: how many more hospital beds will have to be devoted to cancer surgery? In the light of the circumstance that approximately 65 per cent of patients coming for cancer therapy exhibit lymph node involvement, it is obvious that if a "second look" becomes standard practice for

certain cancers, the need for more hospital beds for the surgical treatment of cancer is obvious.

Primary Subtotal Colectomy for Cancer of the Left Colon.—That polyps are a frequent precursor of colic and rectal cancer is well known; that patients may develop a second lesion also is well known. Because of the potential polyp-bearing nature of the mucosa in colic cancer, I have come to feel that a primary subtotal colectomy is indicated in patients with a cancer of the colon lying between the hepatic flexure and the terminal portion of the sigmoid colon. In any such circumstance, it is possible to excise the lesion together with the entire lymphatic drainage area, without provoking persistent diarrhea. For a carcinoma of the cecum, on the contrary, it is mandatory to excise a fairly long segment of the terminal ileum simultaneously, in order to get the entire lymphatic drainage area, a circumstance which would make primary subtotal colectomy for right-sided lesions undesirable, inasmuch as complete loss of the water-wringer of the gut (terminal ileum and right colon) together with excision of the left colon would be followed by persistent diarrhea. In the patients with primary cancer of the left colon, for which primary subtotal colectomy has been done, an end-to-end anastomosis has been effected between the terminal ileum and the ileac colon at or just below the sacral promontory.

A More Radical Attack upon Fixed Intraperitoneal Lesions.—In this clinic over a period of several years, determined efforts have been made to attempt to extirpate fixed lesions. In the colon and the stomach, for that matter, the procedure is not too formidable. In colic lesions, the simultaneous sacrifice of an adherent loop of gut or the removal of a kidney because of fixation of the ureter or sacrifice of a portion of the abdominal wall may be necessary. In fixed gastric lesions, the simultaneous sacrifice of the mid-transverse colon or a good portion of the pancreas may be necessary. In superficial spreading gastric lesions (Borrmann Type IV), total gastrectomy for juxta cardial lesions with simultaneous excision of several centimeters of the lower reaches of the esophagus is in order—a maneuver which is made easier by dividing the crura of the diaphragmatic canal. The developments in thoracic surgery of the last decade have made excision of esophageal cancer a reality. The only portion of the operation which remains to be standardized is the operation for cancer of the cervical esophagus. Excision of fixed pelvic cancers, whether of the rectum or the pelvic viscera, also must be undertaken by the surgeon. Disposition of the urinary outflow has deterred the surgeon in a frontal attack on fixed cancers of the rectum, cervix or bladder. However, preliminary skirmishes with such patients in this and other clinics have shown that it is feasible to remove such lesions and deviate the urinary stream either to the skin or to the bowel. When refinements of surgical technique in dealing with the problem of deviation of urine make the excision of such lesions possible, these cancers will cease to be labeled "inoperable."

Reoperation for patients with evidences of recurrent cancer has long been regular practice among bold cancer surgeons. Such procedures are ordinarily unusually radical, unless the surgeon becomes dismayed by the magnitude of the undertaking and terminates the procedure by mere exploration, a not infrequent occurrence. Such secondary reoperations for cancer test the fortitude of the patients too in many ways, demanding frequently multiple organ sacrifice and occasionally the acceptance of external fecal or urinary stomas. I have the feeling, as indicated above, that early reentry into the abdomen of Group C cases (those with lymph node involvement) before the termination of the latent interval and the reassertion of symptoms (approximately twenty months), that general adoption of the policy of a "second look" in such cases, will not alone result in a larger number of cures in Group C cases but will make less necessary the very formidable procedures of the present occasional secondary operation.

In other words, the lode-star of the cancer surgeon must come to be: *extension of the possible.* A number of years ago, I advocated and practiced excision of isolated hepatic metastases in suitable cases. Inasmuch as the liver regenerates rapidly, probably faster than cancer grows, I am sanguine enough to believe that by employment of a secondary wiping-up operation, it may actually be feasible to remove extensive hepatic metastases if a portion of either hepatic lobe is relatively free from cancer.

More Extensive Operation for Cancer of the Breast with Axillary Metastases.—The disparity in accomplishment by the surgeon in patients with and without axillary lymph node involvement in cancer of the breast is only too well known. Yet surgeons have continued to perform the conventional Halsted operation which obviously is incomplete and inadequate for the patient exhibiting lymph node involvement. For a period of several months, I have been carrying out in such patients a super-radical Halsted operation. The clavicle is divided and the first rib is removed, permitting a much more complete dissection. The site of the juncture of the internal jugular and subclavian veins to form the innominate is uncovered and freed from all lymphatic-bearing tissue. The axillary vein and artery are laid bare for a distance of 12 to 15 cm., and the component parts of the brachial plexus are stripped of lymphatic-bearing tissue. A supraclavicular lymph node dissection of the lower half of the neck is permitted. Extrapleural incisions are made in the intercostal spaces, permitting removal of the intercostal lymph nodes and the internal mammary vessels. More than half the patients with axillary lymph node involvement upon whom this operation has been done have exhibited evidences of cancer beyond the reach of the conventional Halsted operation. Moreover, the surgeon leaves the operation with the feeling that he has enhanced the chances of curing his patient. Only time will tell.

Summary

Man dreads cancer, and well he might when one contemplates the frequency with which it strikes and the large toll it takes. Approximately one out of every eight deaths is due to cancer. And between the ages of forty-five and sixty in women, approximately one out of every four deaths is due to cancer. Cancer of the colon and rectum, considered as one organ, takes the largest toll in cancer deaths. In the male, cancer of the stomach, the colon and rectum, the prostate and the lung are the most frequent causes of cancer mortality; in the female, these are cancer of the breast, uterus, colon and rectum, and the stomach.

In men past seventy-five, cancer of the prostate is the most frequent cancer. Yet, up to the present time only palliative treatment has been advised for this cancer. The development of satisfactory means of achieving urinary deviation may result in a more energetic attack upon this cancer.

Whereas research is the promise and the hope of the future, the formulation of a realistic cancer program demands that more interest be focused by the medical profession upon the difficult task of earlier recognition. Until a biologic test for the detection of cancer becomes available, only careful organ scrutiny, employing screening tests and detailed and precise techniques of organ survey, can bring about the more regular detection of cancer in its earlier phases. Much as we lament the enormous labor of the Cancer Detection Center, what substitute for it is there today? In the light of the circumstance that the silent interval of cancer is in the area of twenty months, in our role as guardians of the health of the people, we cannot continue to await the development of symptoms. We must seek out the patient who harbors the silent cancer. "The price of liberty is eternal vigilance"; the cost of finding a single, symptomless cancer is much labor. Is it worth it? Well, if life has any value, what would it be worth to any of us to have a cancer detected while it was still local? Yes, I believe the salvage of life by the tedious methods of the Cancer Detection Center will justify in superior accomplishment all the cost in labor and money.

While striving to effect earlier diagnoses, which accomplishment will assure a high percentage of cancer cures, we must nevertheless struggle to deal more effectively with the late cancer. Re-entry of the abdomen of patients exhibiting lymph node involvement four to six months after the initial operation, with a view to a "second look" and excision of cancer sprouts, previously undetected, should result in a better accomplishment in such patients. We have been exploring this thesis on patients with colic cancer and are extending its employment to rectal and gastric cancer. In primary cancer of the left colon, a primary subtotal colectomy is indicated. The surgeon should give more considered thought to the extirpation of fixed intraperitoneal lesions, whether of the colon, stomach, rectum or other pelvic viscera. In patients with cancer of the breast, exhibiting axillary lymph node involvement, an extension of the operation to include an additional centrifugal group of lymph nodes in every direction appears justified.

The increasing frequency with which cancer is

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REVERSIBLE FORMS OF HEART DISEASE

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FOR MANY years the diagnosis of heart disease connoted a life of invalidism with probable death by virtue of the affliction. In recent years, however, the marked advances in medical science have not only enabled the heart patient to live a more useful life but also have shown that many forms of heart disease are entirely curable. It is important to remember that a normal heart or a heart that is only slightly diseased may show symptoms that are solely the expression of some extracardiac disease, and that this extracardiac condition may manifest itself entirely or largely in the cardiovascular system. As a result, the cardiac symptoms may be so marked that they completely overshadow the underlying extracardiac disease. As a result the patient is often considered a cardiac invalid, whereas recognition of the effect of the extracardiac disease with treatment directed to the extracardiac condition usually brings about a reversibility in the cardiovascular symptoms. Failure on our part to recognize that many extracardiac diseases are expressed clinically through the cardiovascular system has led to unnecessary invalidism and even death. In every cardiac patient we must constantly be aware of the possibility that the heart itself may not be actually diseased but that rather it is acting secondarily to other conditions in the body. It is only by recognizing these extracardiac factors before they produce structural changes in the heart muscle that treatment of the extracardiac disease may be instituted sufficiently early for the patient to be cured. It is the purpose of this paper to point out in a general way some conditions that are manifested entirely or largely through the cardiovascular system, with the result that a normal or a previously damaged heart may be precipitated into actual cardiac failure. It is apparent that all of the diseases that may produce such changes cannot be listed in the space permitted, and under these circumstances only a brief mention will be made of the various illnesses that can affect the cardiovascular system.

We are familiar with the symptoms presented by the markedly obese patient. He frequently complains of dyspnea, palpitation and precordial distress. Physical examination may often reveal an elevated blood pressure, and pretibial edema is not uncommon. The electrocardiogram may show an inverted QRS_3, the "T" wave in lead III may be inverted, and the presence of a "Q" wave in lead III may be significant. The x-ray of the heart may also show that the heart is pushed up and apparently enlarged. All of the signs and symptoms presented by the patient are the result of the excess weight he carries, as well as the increased work placed on the heart by the larger blood volume associated with the obesity. Loss of weight through a reducing regime brings about a disappearance of the signs and symptoms enumerated above. In some types of obesity, the heart itself may actually play a role in the increased deposit of fat. Normally there is more adipose tissue on the right side of the heart than on the left. If the adipose tissue in the heart follows the course of the increase of adipose tissue throughout the body, then there will be a marked infiltration of fat on the right side of the heart. This infiltration may progress to the point of producing right heart strain and right heart failure. Here again, weight loss brings about a return of the cardiac function to normal, for just as the adipose tissue throughout the body decreases, so does the adipose tissue in the heart decrease. In very severe toxic, anemic or infectious states, fatty metamorphosis may occur within the heart muscle. These lipids may accumulate within the cell to such an extent as to interfere with the function of the cell, and thus cardiac failure may ensue. If the etiologic agent producing the fatty metamorphosis is a treatable lesion, then as the extracardiac lesion is cured, the secondary fatty metamorphosis within the heart is cured and the heart regains its function.

Acute blood loss produces very marked cardiovascular symptoms in the form of shock. In addition, a precordial systolic murmur associated with the acute anemic state is not uncommon. With restoration of the blood volume both the symptoms of shock and the murmur disappear. In the chronic types of anemia not only may there be a systolic murmur over the precordium, but upon

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occasion a diastolic murmur may be heard over the pulmonary artery area. There is frequently an enlargement of the heart, and at times this hypertrophy may be very marked. The electrocardiographic tracings usually reveal nothing significant. Here again treatment of the underlying cause of the anemia usually restores the cardiac function to normal. It is also important to recognize the effect of even mild degrees of anemia upon patients with degenerative forms of heart disease, such as coronary sclerosis. Disease of the coronary arteries may not be sufficient to produce either signs or symptoms, as sufficient blood is still being supplied to the myocardium. However, when these patients develop anemia, the reduced oxygen-carrying power of the blood plus the mechanical interference with the circulation incidental to the coronary sclerosis may be sufficient to produce marked anginal symptoms and even myocardial infarction may result. Here again, recognition of the effect of the underlying anemia upon the previously diseased heart and the successful treatment of the anemia invariably lead to clinical improvement.

Avitaminosis, particularly a deficiency in vitamin B, sometimes produces reversible changes in the cardiovascular system. This is particularly true in those individuals who are malnourished as a result of either chronic wasting diseases, self-inflicted starvation, or in the malnutrition secondary to chronic alcoholism. The diagnosis of beriberi is made by having a high index of suspicion that such a condition may be present in malnourished cachectic patients. The diagnosis is frequently recognized when a patient with obvious heart disease fails to respond to the usual treatment of heart failure and then consequently responds when his diet is adequate and supplemented by vitamins. The symptoms of beriberi heart disease may vary from simple tachycardia to very marked congestive heart failure. It is the failure of the patient to respond to the ordinary cardiac regime and his response to a high caloric, high vitamin regime that establishes the diagnosis of beriberi.

Some types of congenital heart disease are now cured by surgical intervention. The diagnosis of congenital heart disease can therefore no longer be considered of academic interest only. Patent ductus arteriosus, which is essentially an arteriovenous fistula between the aorta and the pulmonary artery, is readily cured by surgery. This fistula, serving a useful purpose in intrauterine life, may persist after the first year of life and produce symptoms and cardiovascular distress. The diagnosis is apparent because of the machinery hum murmur over the base of the heart, a high pulse pressure, absence of cyanosis, and usually the presence of a normal electrocardiogram. Surgical closure of the ductus brings about a complete relief of the cardiovascular symptoms. Should bacterial endarteritis be present, the combination of operation with antibiotics and chemotherapy also cures the condition. Coarctation of the aorta is an easily diagnosed condition when it is recalled that in this disease there is hypertension in the upper extremities and hypotension in the lower extremities. Various murmurs may be heard, but the diagnosis depends upon determining the presence of the hypertension in the upper extremities and the hypotension in the lower extremities. This is easily accomplished by simultaneously palpating the radial and femoral arteries during every routine examination. The removal of the coarctation with the end-to-end anastomosis of the aorta effects a cure in these patients. Cyanotic heart disease is omitted in this discussion, for the procedures are palliative rather than curative. Anomalous vessels occurring about structures in the neck are also easily diagnosed and easily cured by the surgeon.

Arteriovenous fistulas may be either acquired or congenital. In either event, they may produce very marked disturbances in the cardiovascular system. The diagnosis of the arteriovenous fistula and then the surgical correction of the lesion results in the disappearance of the cardiovascular symptoms.

Endocrine disturbances are frequently associated with marked changes in the cardiovascular system. Addison's disease with associated hypotension, small heart, and signs of peripheral collapse is familiar to all of us. With the use of proper cortical extracts, saline solutions and the like, the cardiovascular symptoms promptly disappear, blood pressure returns to normal and the heart to normal size. Hyperfunction of the adrenal gland in the form of a pheochromocytoma causes vascular crises, paroxysmal or prolonged hypertension, headaches, collapse, et cetera. Here again, recognition of the tumor and its surgical removal brings about relief to the patient. Hyperthyroidism may express itself through the cardiovascular system in the form of simple tachycardia, par-

oxysmal tachycardia, paroxysms of auricular fibrillation or even persistent auricular fibrillation. It is not uncommon to have a slight elevation in the systolic blood pressure, and the patient may be dyspneic as a result of the increased demand for oxygen. Proper preparation of the patient and surgical removal of the diseased gland relieves the symptoms. At times, a mild hyperthyroidism may be sufficient to precipitate severe heart failure in the middle-aged or aged person with degenerative heart disease. Here again, relief of the hyperthyroidism aids in the return of the cardiac function to its previous state. Myxedema is not an uncommon disease. The symptoms and signs of myxedema are manifold and often involve the cardiovascular system. These patients frequently have a very characteristic type of electrocardiographic tracings with low voltage and low voltage "T" waves or even inversion of the "T" waves. Treatment with thyroid gland invariably relieves the cardiovascular symptoms.

We can no longer consider that hypertension is incurable. Hypertension associated with coarctation of the aorta, with arteriovenous fistulas, with hyperthyroidism, with pheochromocytomas, with unilateral renal disease and certain types of kidney tumors can be cured by appropriate surgical treatment.

Formerly, acute bacterial endocarditis, subacute bacterial endocarditis and the acute and subacute forms of endarteritis, were almost always fatal. With the advent of antibiotics and chemotherapy, many of these patients are promptly cured and are returned to an active normal life and the heart and the cardiovascular system may be returned to its previously normal or inactive involvement.

Pericarditis is not an uncommon disease, and the acute forms are easily recognized and usually heal spontaneously. There is one form, the idiopathic relapsing type of pericarditis, which simulates coronary thrombosis with myocardial infarction. Failure to recognize that the lesion is pericardial rather than myocardial may lead to invalidism. The disease is readily diagnosed by the history, by the physical findings and by the electrocardiographic tracings which reveal the signs associated with pericarditis. This condition also leaves no residue, and the patient, after the acute illness has subsided, may have a normal cardiovascular system. It is possible for a chronic type of pericarditis to develop and over a period of years the increase in fibrous tissue compresses and constricts the heart. This constriction may develop to such an extent that it interferes with cardiac function. When it does so, the venous pressure becomes elevated, the peripheral pulse becomes small and systemic blood pressure falls. There is an increasing amount of edema, the liver enlarges, and the symptoms resemble those of cirrhosis of the liver. The triad of the increased venous pressure, the small peripheral pulse and the decreased systemic blood pressure suggests the diagnosis. On physical examination, the heart is usually small, murmurs are seldom heard and the heart is frequently silent. On fluoroscopic examination the heart seems to pulsate but little. An electrocardiogram has a characteristic pattern. Recognition of the syndrome, surgical removal of the constricting pericardium relieves the condition. Acute cardiac tamponade may occur either as the result of infections or injury to the pericardium and the like. Here, as a result of the rapid accumulation of fluid within the pericardial sac, the heart is compressed and we have a rapid rise in the venous pressure, a fall in the systemic blood pressure and a very weak and rapid pulse. The cardiac silhouette is enlarged on x-ray and physical examination. Removal of the fluid, either by paracentesis or by surgical means, relieves the condition.

Pulmonary heart disease in the acute form is best recognized in the form of pulmonary infarctions. Here acute right heart strain results from the pulmonary embolic phenomena. The diagnosis is frequently made from the history of a recent surgical procedure or long confinement to bed from one cause or another; the patient suddenly experiences a severe chest pain, goes into collapse, becomes cyanotic and even moribund. The symptoms are quite distinct from those of a coronary thrombosis. Here the electrocardiogram has also a characteristic pattern, and treatment directed to support the cardiovascular system usually results in recovery. Some forms of chronic cor pulmonale are reversible. The accompanying right heart strain is secondary to some chronic disease of the lung or thoracic cage. It is possible that antibiotics, chemotherapy, or surgical procedures administered for the lesions of the lungs or the thoracic cage may bring about a relief of the right heart strain. Many mechanical disturbances of the thoracic cage may produce profound alterations in the cardiovascular function. These are best seen in individuals with kyphoscoliosis, or in

those who suffer from acute compression of the mediastinum and heart as a result of injury or displacement of the heart from any cause. Here again, treatment directed toward the offending mechanical agent will usually relieve the cardiovascular symptoms.

In conclusion, some examples of cardiovascular disease have been listed wherein the heart itself may be normal or only slightly diseased, but by virtue of extrinsic factors acting upon the heart or through the cardiovascular system, the heart is precipitated into severe congestive heart failure. As a result, the patient may become invalided and even may die as a result of this disturbed cardiovascular function. If recognition of the extracardiac disease is made early before structural changes in the heart become irreversible, treatment of the extracardiac disease will usually result in cure. Failure to recognize extrinsic factors as they express themselves in the cardiovascular system usually leads to irreversible changes in the cardiovascular system with ultimate cardiac death. The saying is applicable to the heart that it is more often sinned against than sinning.

Discussion

Dr. Joseph Borg, Saint Paul: Dr. Briggs has called our attention to certain heart conditions which are amenable to treatment because the factors which damage the heart, or which lead to heart failure secondary to heart strain, can be removed or their effects materially lessened. This emphasizes the need for accurate diagnoses in all cases of heart strain and heart failure in order that proper measures for their correction may be instituted.

Properly speaking, there are few chronic or acute infectious diseases which may not in some way cause interference with proper heart function, but in most of these it is not necessary for us to particularly direct our attack on the cardiac manifestations since these will subside with satisfactory response of the underlying disease. It is not to these conditions that our attention is being drawn, but rather to conditions in which the cardiac manifestations are paramount at some time or other and therefore must be distinguished from the heart diseases which may produce similar clinical pictures, but in which organic changes are irreversible, such as the valve deformities of rheumatic disease, the vascular changes of arteriosclerosis, and the hypertrophy of hypertension arteriovenous aneurysm or other cause.

The so-called reversible heart conditions then may be divided into (1) conditions in which structural heart change leads to disability, such as the congenital defects and the results of inflammation which lead to constrictive pericarditis, and (2) conditions in which extracardiac etiologic factors lead to syndromes in which the cardiac manifestations are of major importance. Dr. Briggs has discussed conditions in which dramatic recovery from disabling heart disease can be obtained by proper treatment. Other conditions, while relatively infrequent, are sufficiently numerous in the aggregate to form a sizable important group which is frequently overlooked because consideration is not given to the possibilities and sufficient attention has not been called to them.

The dramatic accomplishments of the surgeon in alleviation of the disability due to traumatic injury and to congenital defects speak for themselves. I should like, however, to call attention to the difficulties of accurate diagnosis in some of these and to emphasize the need for the most exhaustive study possible of these cases. This may not be possible by even the most experienced cardiologist practicing alone, and the development of group study by competent investigating teams will probably be the answer. Too few cases of this type are seen by the individual doctor, and mistakes in diagnosis can be averted only by most careful study.

Disturbances of function, such as neurocirculatory asthenia and paroxysmal disturbances of rhythm, may not be easy to diagnose at times, but when recognized their response to treatment is often gratifying. Severe nutritional disturbances in obesity, scurvy, beriberi, and rickets, produce myocardial insufficiency. Severe anemia, especially pernicious, may be responsible for angina pectoris.

Endocrine diseases also may account for heart disability, as seen in adrenal tumors and the thyroid conditions which have been discussed. And finally, the cardiac failure secondary to hypertension has been demonstrated to be reversible in certain patients who have satisfactorily responded to sympathectomy.

Dr. Briggs, therefore, has done us a distinct service in calling our attention to these conditions. To recognize them, our index of suspicion must always be high, and the reward will be gratifying to both the patient and physician.

BABIES AND POLITICAL STRATEGY

From Tel Aviv, Palestine, comes the report that the Israeli Government has recently decided to provide a baby bonus of $300 to each mother who bears her tenth child. This is the opposite of the Canadian baby bonus plan where the payment decreases after the birth of the fourth child. No doubt the Israeli bonus will inspire some mothers to raise large families—despite the fact that most Oriental countries consider the high birth rate a problem.

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SLIPPING OF THE CAPITAL FEMORAL EPIPHYSIS

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EPIPHYSEAL or adolescent coxavara is a condition in which the femoral neck or metaphysis rides or slips out of its normal position beneath the head, rotates externally and rides up in relation to the head. This usually occurs gradually but may slip acutely. Varying degrees of displacement are observed when the patient is first seen. Upon the degree of slipping depend, in large measure, the results which are obtained by treatment. Early diagnosis before gross deformity has already developed is paramount for the best results. Untreated persons at an early age develop severe symptoms of hypertrophic arthritis or, as it is often termed, malum coxae senilis.

In 287 cases of hip joint disease observed in adolescents under twenty, this condition was noted in twenty-six by Brailsford. Eighteen were male and eight female.

The etiology is obscure. Rickets is probably a factor in some cases. It is often seen in the Froehlich type of obese patient, but this may be due to the added stress and strain of excessive weight rather than directly resulting from glandular dysfunction. Acute displacement may be the direct result of trauma. We do not know the cause in the majority of cases.

The typical case will be an adolescent between ten and eighteen, complaining of pain in the region of the hip joint, often about the knee, and vague subacute pain in the thigh. One should be suspicious of hip joint disease when discomfort is localized only to the knee or thigh. Limp will often be noted, particularly by the parents. Symptoms will have been present for a varying time. It will be stated that rest relieves symptoms. On examination some limitation of hip motion will be demonstrated, varying greatly with the degree of slipping which has occurred when the patient seeks aid and with the severity of the symptoms. Limitation of internal rotation should be particulary noted. In early cases a mere sense of resistance to internal rotation when rolling the extremity with the palms of the examiner's hands may be the only positive diagnostic sign. Fixed external rotation will be present in the cases with marked separation. It will be noted even in some early cases that when the hip is flexed, it tends to rotate externally. It will not be possible to rotate the flexed hip internally in the advanced cases, and fixed external rotation will be present. Shortening will not be noted unless marked deformity is present. A limp favoring the affected side and toeing out may be noted. Hyperextension will be limited. The hip will be adducted, and abduction, therefore, will be limited even in some early cases.

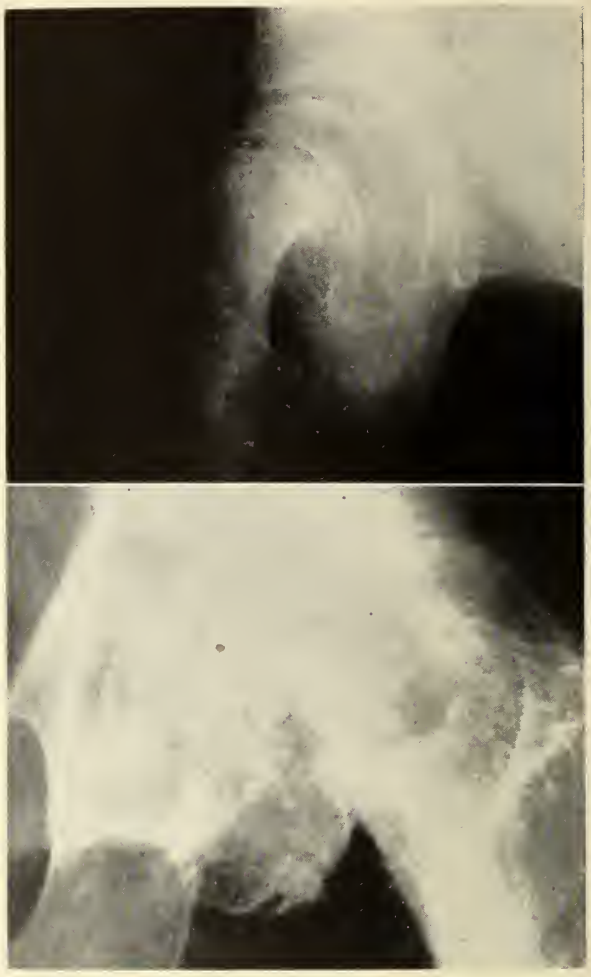


Fig. 1. *(above)* Extreme slipping of the upper femoral epiphysis. This case would require reduction or osteotomy of the neck.

Fig. 2. *(below)* Case of degenerative changes developing in a previously slipped epiphysis which was untreated.

Read at the annual meeting of the Minnesota State Medical Association, Saint Paul, Minnesota, May 9, 1949.

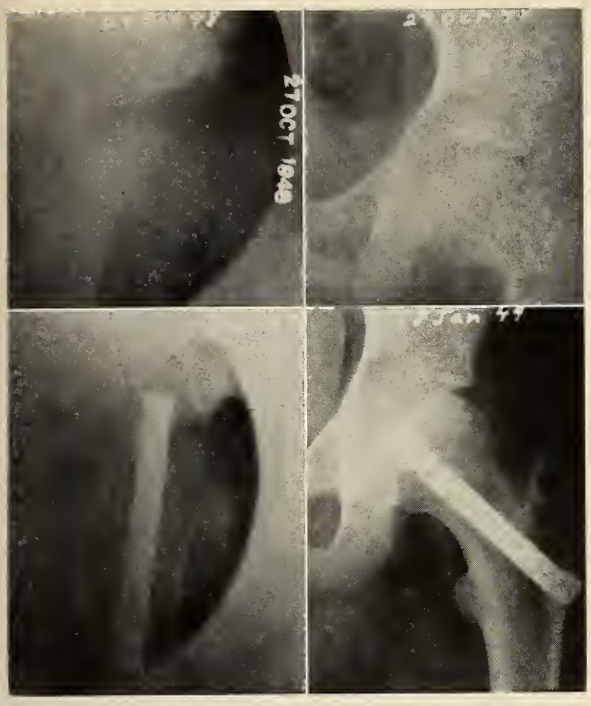


Fig. 3. *(above)* and Fig. 4 *(below)*. Minimal slipping nailed without reduction. The epiphysis closed six months after nailing. No apparent residual disability.

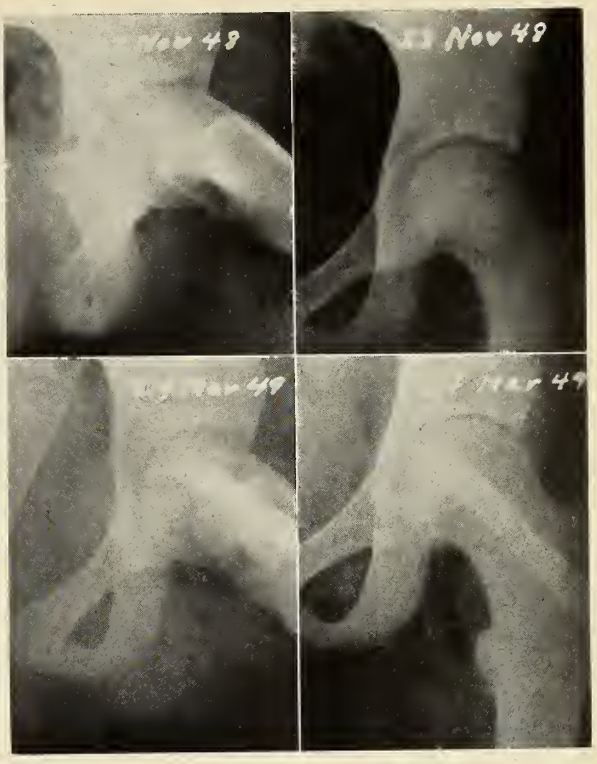


Fig. 5 *(above)* and Fig. 6 *(below)*. Minimal slipping nailed *in situ*. Apparently cured without disability.

Similar physical findings are noted in tuberculosis of the hip and in Perthes' disease. The x-ray picture is diagnostic. The x-ray findings will vary with the degree of malposition of the head in relation to the neck. In early cases, termed the pre-slipping stage, it is stated by some observers that thickening of the neck or metaphysis and accentuation of the space between head and neck may be the only sign. However, this pencil line distinctness of the epiphyseal shadow is due to rotation of the neck on the head, and, in my experience, these cases will also show a narrowed shadow of the head in the anteroposterior view and some distortion of the normal relationship of the head and neck in the lateral view. The metaphyseal thickening is found constantly, and, where observed, this condition should be suspected. As the condition advances, the neck rides up so that its superior border lies in the same plane with the top of the head in the anteroposterior view, and the lower border of the head may be in line with the lesser trochanter. In the lateral view, almost complete rolling out of the neck from under the head may be observed. In the final stage of the process the typical picture of the hypertrophic hip is demonstrated. When the diagnosis is made, weight bearing should be rigidly prohibited until treatment can be instituted. Cases have been observed in which there is sudden and complete separation. In cases with minimal slipping, internal fixation without altering the position gives excellent results. Light traction followed by gentle manipulation and internal fixation is sometimes successful. Open reduction is favored over forceful manipulation. The latter seems to further limitation of motion. Removal of a bone wedge may be necessary to obtain normal head and neck relationship.

In conclusion, I would stress the importance of early diagnosis. Where marked deformity is allowed to occur, the patient's activities are severely limited. Early in life, the typical hip of old age develops, necessitating reconstructive procedures and acceptance of a sedentary existence, deprived of the pleasures of even noncompetitive sports and slightly rigorous occupations.

THE PRESENCE OF SODIUM IN NATURAL WATER AND SOFTENED HARD WATER IN RELATION TO LOW SODIUM DIETS

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INTEREST in the use of low salt diets for treatment of hypertension has recently been stimulated by reports in which the intake of sodium chloride is rigidly controlled. In the "rice-fruit-sugar" diet for treatment of hypertensive vascular disease, Kempner[4] states that this diet contains not more than 200 mg. of chloride and 150 mg. of sodium. Grollman[3] reported the use of a 2,000 calorie diet containing less than 1.0 gm. of sodium chloride. Schroeder,[6] summarizing the literature, reported the use of diets in which the sodium content ranged from 200 to 400 mg. of sodium per day. At the University of Minnesota Hospitals,[1] the daily intake of sodium in such diets is limited to 200 mg. of sodium or approximately 0.5 gm. of sodium chloride.

Gorham[2] has reported beneficial results with the restriction of sodium chloride to less than 1.0 gm. in treatment of cardiac failure with edema.

In view of this drastic reduction of sodium in these diets, it can readily be seen that any extraneous addition of sodium to the diet, such as from the water supply, even in small amounts, would offset the restrictions of the diet. With this in mind and considering that sodium chloride restriction may be of importance in other conditions such as kidney disease and pregnancy, it was decided to make a study of natural waters as they occur in Minnesota to determine the presence of sodium, and to show in other instances the effect of water softeners on the presence of sodium in the softened water supply.

Water samples were collected during April and May, 1949, from a number of municipal systems in those parts of Minnesota where previous analytical determinations indicated that sodium might be present in the ground water. Since surface water supplies such as are obtained from lakes and rivers are normally low in sodium, no waters of this type were examined during this study. Sodium concentrations were determined gravimetrically in the water laboratory of the Minnesota Department of Health by the method of Kolthoff and Sandell,[5] and ranged from 17 to 568 parts per million.

TABLE I

Municipality	County	Sodium Concentration (p.p.m.) in Municipal Water Supply
Bricelyn	Faribault	92
Stewart	McLeod	84
Hector	Renville	131
Olivia	Renville	104 (East well)
Olivia	Renville	105 (West well)
Barry	B'g Stone	568
Danube	Renville	103
Bird Island	Renville	70
Brooten	Stearns	17

The results of this spot check of municipal supplies are shown in Table I.

Concentrations expressed as parts per million are the same when expressed as milligrams per liter, that is, 568 parts per million is 568 mg./liter of water. From these results, it is reasonable to believe that other municipal wells and many private farm and home wells contain significant amounts of sodium.

Where hard waters occur, water softeners of the zeolite base exchange type are in use throughout this and most other states in homes and municipalities. The home softening units may be either of the type which is replaced at periodic intervals by a service company or of the type which is recharged by the home owner through introduction of salt or salt brine.

The exchange process takes place in a manner similar to the following equation:

$$\begin{matrix} MgSO_4 \\ CaSO_4 \\ CaCl_2 \\ MgCl_2 \end{matrix} + \text{Na zeolite} \rightarrow \begin{matrix} \text{Mg zeolite} \\ \text{Ca zeolite} \end{matrix} + Na_2SO_4$$

$$Na_2SO_4 \rightleftarrows 2Na^+ + SO_4^{--}.$$

In this equation the calcium, magnesium and a few other ions tied up with such anions as sulfates, carbonates, bicarbonates, chlorides, et cetera, are replaced by sodium. This means that the harder the water, the greater the concentration of sodium found in the softened water. In order to demonstrate what such hardness will yield in terms of sodium after softening by the zeolite process, a few of the municipal waters are listed

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TABLE II

Municipality	County	Hardness in Terms of p.p.m. Calcium Carbonate	Resulting Sodium Concentration in Terms of p.p.m. Sodium
Alberta	Stevens	830	380
Alvarado	Marshall (South well)	1160	530
Canby	Yellow Medicine	920	420
Currie	Murray	1200	550
Fairfax	Renville	720	330
Hills	Rock	1050	480
Jeffers	Cottonwood	1700	780
Lewisville	Watonwan	1200	550
Ortonville	Big Stone	830	380
Round Lake	Nobles	1100	500
Slayton	Murray	1100	500
Wilmont	Nobles	1800	825

in Table II, together with the sodium concentration that would result if the water were completely softened.

For those water supplies for which the hardness is known, the sodium concentration can be readily obtained by multiplying the hardness concentration expressed as $CaCO_3$ by a conversion factor of .46. Thus, a water supply which has a hardness of 1,000 parts per million as $CaCO_3$ would have a sodium concentration of about 460 parts per million if it were completely softened by being passed through a zeolite unit.

It becomes evident that zeolite-softened water and natural waters high in sodium have a definite significance wherever sodium-free diets are prescribed if this water is used for drinking purposes. As a matter of policy, it seems advisable for physicians to check on all waters used by patients on such diets, to determine (1) that the natural water is low in sodium and (2) that no water is consumed which has been passed through a zeolite softener.

Summary

Analytical data are presented to show that a number of natural ground waters in Minnesota contain significant concentrations of sodium and that all hard waters passed through zeolite softeners will be high in sodium.

These data are presented in order that physicians who may prescribe low sodium diets may know that significant amounts of sodium may be introduced through the water intake.

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THE SURGEON AND THE CANCER PROBLEM

(Continued from Page 1105)

being cured brings the comfort of hope to potential and actual cancer sufferers. The consideration of a large initial operative mortality is no longer an important deterrent. The only dread should be the *fear of neglect.*

A series of intelligent questions will have to be directed by the cancer investigator at the cancer diathesis. Each question answered enhances the likelihood that we may ultimately have a satisfactory answer to these questions which occupy the minds of all of us.

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Case Report

VESICOVAGINAL FISTULA CURED WITHOUT MAJOR SURGERY

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THE CASE I am presenting is that of a vesicovaginal fistula, which appeared ten days after I had performed a complete abdominal hysterectomy on October 3, 1935. Confirmation of the suspected vesicovaginal fistula was obtained by instillation of methylene blue solution into the bladder and its subsequent detection in the vagina. About three weeks later, upon a more thorough examination of the vaginal field, the fistula was found to be in the two to three o'clock position in the vaginal wall two-thirds of the distance posterior to the internal labia on the left side of the vagina.

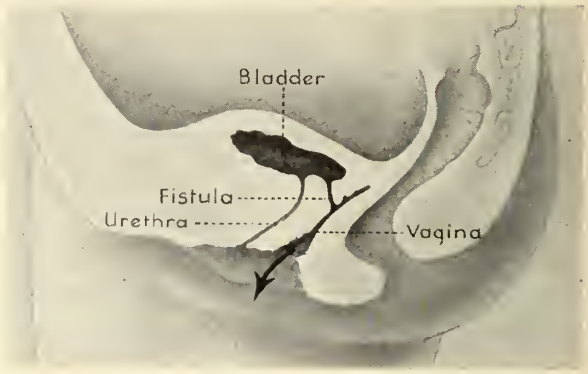
Two months after the operation, when the chances of injury to the operative field were minimized, a cystoscopic examination was performed; the site of the fistula in the bladder was located, and it was determined that the ureters and trigonum vesicae were intact.

The fistula was about the diameter of a small darning needle and through it about one-third of the total urinary excretion drained off from the bladder. This necessitated the wearing of a napkin to catch the drainage of urine from the vagina. When a snake-eye catheter was inserted in the bladder so that no back pressure of urine existed, only a small amount of urine drained through the fistula.

The operative method of treating the fistula was discussed with the patient, but she was very much opposed to further surgical treatment. We then considered the chance of treating the fistula by injection of sclerosing solution about the fistulous opening. Although a cure could not be foretold with any certainty, the patient readily consented to this procedure.

The patient was hospitalized for four days and a self-retaining catheter was maintained in the bladder during that time. On April 29, 1936, the fourth day in the hospital, the catheter was removed at 5:00 a.m. to allow the bladder to fill, and at 8:00 a.m. the patient was taken to the operating room and a general anesthetic administered. The patient was placed in the dorsal recumbent, moderate Trendelenburg position.

Vaginal retraction was accomplished by a self-retaining weighted vaginal retractor inferiorly and a Sims' vaginal retractor anteriorly and somewhat to the left, held by the assistant, thus bringing the fistula into the field of vision. A 5 c.c. glass tonsil syringe containing 5 per cent sodium morrhuate sclerosing solution, with an angular tip tonsil needle, was held in the right hand. The tip of the angular tonsil needle was carefully placed in the posterior portion of the fistulous tract,



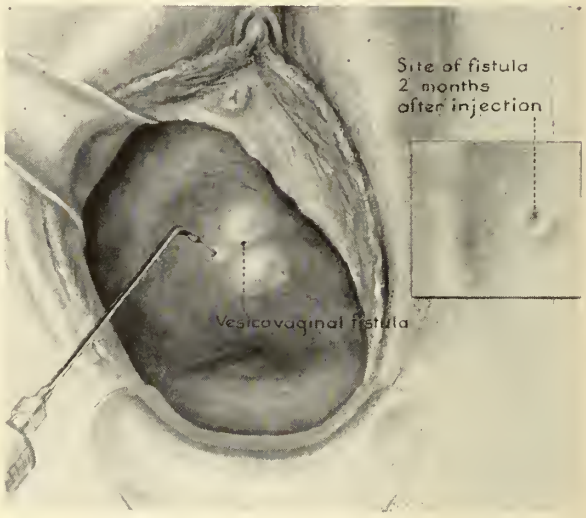


Fig. 1. *(above)* Site of vesicovaginal fistula.
Fig. 2. *(below)* Obliteration of vesicovaginal fistula by injection.

about ¼ inch from the tract in the vaginal mucosa, and a bleb of about 5 or 6 minims was injected. This was in the twelve o'clock position to the fistulous opening. The same procedure was carried out in the four o'clock and the eight o'clock position of the fistulous opening. There was a distinct difference noted in the resistance to the needle of the vaginal mucosa and the bladder wall. This made it possible to inject into the vaginal mucosa and the outer muscular coat of the bladder wall and not into the bladder lining. We then tested and found we had closed the fistulous opening. This was determined by instilling into the bladder, 50 c.c. of methylene

(Continued on Page 1128)

Read at the annual meeting of the Southern Minnesota Medical Association, Red Wing, Minnesota, September 12, 1949.

History of Medicine In Minnesota

MEDICINE AND ITS PRACTITIONERS IN OLMSTED COUNTY PRIOR TO 1900

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Rochester, Minnesota

(Continued from the October issue.)

When in June, 1867, an appointee was named to finish the term for which Dr. Galloway had been elected in 1865, the *Rochester City Post* stated: "We have a coroner in Olmsted County, a much needed officer. The vacancy which has so long existed in this important office has been filled by Mr. L. L. Benjamin who will fill it faithfully and well." In the following November Mr. Benjamin was elected coroner. He served his full term, and subsequently from time to time acted as deputy coroner.

The remainder of the record is clearer. Dr. W. W. Mayo, elected coroner in 1869, served one term. He was succeeded by Alfred Blanchard, a layman, who served one term. Dr. Galloway was re-elected in the autumn of 1873; evidently part of this term was filled by N. E. Gaskill. Dr. G. W. Nichols was coroner in the period of 1874-1877, and Dr. F. R. Mosse in 1878-1879. Dr. Nichols, re-elected in November, 1879, moved to Dakota Territory in June, 1880, and Dr. E. T. Sedgwick was appointed to fill the vacancy. Dr. Mosse again was elected in November, 1880, and served through 1894. Dr. A. S. Adams held the office in 1895-1896, Dr. Mosse in 1897-1910, and Dr. J. E. Crewe from January, 1911, well into 1946.

The Sick Poor and County Physicians.—One of the early acts of the first territorial legislature of Minnesota was to pass a law providing for relief of the indigent, whereby relatives of the poor were primarily responsible for their support. When solvent relatives were lacking, each township was required to provide financially for the resident poor, the actual care being under supervision of the county board of commissioners. In the records of Olmsted County the first mention of paupers and foundlings occurs in the commissioners' proceedings for January 5, 1857. The commissioners were authorized to build or provide a workhouse for the accommodation and employment of public charges, and accordingly the Olmsted County Poor Farm was established in 1868; three changes of location of this home were made before 1900. After the Civil War the large number of soldiers' orphans left destitute in this county and throughout the state required frequent state legislation, between 1865 and 1879 for their relief. Laws providing for improvement in the care of the poor, including foundlings, orphans and the aged, are a matter of record.

In Olmsted County the commissioners, in addition to providing suitable support for the poor, supplied also, if necessary, *medical care* to all indigent persons who had resided in the county for one year prior to application for aid. In 1864 the office of county physician was established by the legislature, for the purpose of furnishing medical aid to the sick poor. These physicians were appointed by the

county board to serve at its pleasure. After answering a first call from a sick person, a county physician made additional calls only on order from the commissioners. In some counties, as in Olmsted, the position of county physician rotated among the physicians in the various districts; in an occasional district the position was held by one man in what amounted to almost a life tenure. For a time at least, in Olmsted County, physicians submitted sealed bids for appointment. All county physicians furnished medicines and other therapeutic supplies.

In an occasional year some of the townships of Olmsted County did not have official county physicians, in which case the local physicians attended the sick poor and in due course presented their bills to the county commissioners for payment. Compensation of county physicians in Olmsted County was about 60 per cent of the usual professional rates and ranged from $48 to $250 annually depending on the size of the territory served and on the variety of duties, as will appear.

Although the records consulted are not complete, there is evidence that at one time or another many physicians of Olmsted County, and among them some of the most able, administered officially to the poor. A few names taken at random from different years are given here:

The first comment noted about a city physician (appointed by the county commissioners) for Rochester concerned the appointment of Dr. W. A. Hyde in 1864. In January, 1870, Dr. B. J. Kendall, of Marion, was named physician for the Olmsted County Poor Farm, and Dr. Hector Galloway, county physician. In March, 1872, five county physicians were appointed, one for each commissioner district. From March, 1873, to March, 1876, the county had three such physicians: during this period, in March, 1874, there were appointed Dr. E. C. Cross, for the city of Rochester and ten townships including Rochester Township, Dr. C. E. Teel, of Eyota, and Dr. J. F. Slocum, of Marion, at annual salaries of $110, $48 and $150, respectively.

Beginning in 1876 and continuing through 1913, one county physician was appointed periodically to serve the city of Rochester and to attend the inmates at the poor farm; in the nineties this service was extended to include attendance at all examinations of insane persons before the judge of probate. This multiple office commanded $250 a year.

From 1876 to 1881, inclusive, there were five county physicians: In 1878, for example, Drs. H. Galloway and F. A. Sanborn jointly for the city of Rochester and six townships and the poor farm; Dr. I. M. Westfall, of Eyota, for the village of Eyota and six townships; Dr. I. H. Orcutt, of Byron, for the village of Byron and three townships. In 1880 Dr. G. W. Nichols served the Rochester district; Dr. J. N. Farrand, of Oronoco, his village and three townships; Dr. I. H. Orcutt, Byron and three townships; Dr. A. W. Stinchfield, Eyota and four townships; and Dr. M. A. Trow, of Chatfield, the townships of Elmira and Orion. As stated previously, Chatfield lies partly in Elmira Township, Olmsted County, and partly in Fillmore County. From 1881 to 1890, inclusive, seven county physicians were appointed; in 1891, eight; and in 1898, five.

Vital Statistics.—In accordance with the state law passed in 1869 the official registration of births and deaths in Olmsted County began in 1870. Issues of Rochester newspapers from that year forward give condensations of annual reports on these statistics, and also indicate that for several decades considerable difficulty was encountered by the authorities of the county in enforcing the law of registration, especially the recording of births. On May 6, 1871, the *Rochester Post* stated: "All births taking place in this city must be reported promptly to the city recorder. The law requires this under severe penalty. New parents will take

notice." The same paper on January 9, 1891, said: *"Reports of births.* The law requires that all births shall be reported every year to the city health officer. This law has not been complied with in this city the past year and unless those interested report to Health Officer Mosse immediately, the penalty, a fine of $10, will be inflicted."

Olmsted County and Rochester were not the only delinquents. Dr. H. M. Bracken, secretary of the State Board of Health and Vital Statistics, in presenting to Governor Lind, on December 30, 1900, the report on vital statistics in the state for the period of 1894-1897, wrote: "It would seem that the laity should recognize the importance of records of births and deaths as bearing upon such legal documents as wills, et cetera, and that physicians and midwives would comply with the law demanding reports of births and deaths. In spite of all efforts of this board, returns are very imperfectly made, and many local officers fail to enforce the law requiring reports. As a result of this negligence Minnesota is still c'assed with the 'nonregistration states' by the census bureau at Washington." He expressed the hope that before another decade had passed, the reports of births and deaths from Minnesota might be in such form as to insure proper recognition by the federal government.

The death rate in Olmsted County for many decades hovered around 1 per cent. In 1891 the death rate in Rochester was 11.6 per thousand, less than in any other city in the state. The computation in that year, as in every other year subsequent to 1879, excluded the deaths among patients at the state hospital, those patients being considered nonresidents of Rochester.

Public Health.—In the pioneer years, living conditions in Olmsted County and other counties of Minnesota were crude, and measures for sanitation were primitive or lacking. That was the period, long continued in isolated communities, of individualism in matters of health. The early physicians met problems of public nuisance, endemic disease and epidemic disease as best they could, but their knowledge and experience were inadequate, and the laity were uninformed or indifferent, many of them ignorant and superstitious. Disregard of cleanliness produced much nuisance and illness, and mistaken personal independence of conduct, in the presence of contagious disease, multiplied hazards in communities. Certain residents of foreign extraction, for instance, declared that smallpox and diphtheria were acts of God and, even when members of their households were ill with one of these diseases or other communicable disease, went deliberately from home to home among their friends and into churches, stores and other public places.

With increasing population and livestock and with unclean sties, stables and latrines close to dwellings, came myriads of houseflies. The late Charles N. Ainslie (as stated earlier, Mr. Ainslie from 1906 to 1930 was a member of the Federal Bureau of Entomology in Washington, D. C.), who came to Rochester in 1862 as a child, said in his memoirs (1938), in discussing early conditions of living in Olmsted County:

> The slogan, "Swat the Fly," originated by Dr. L. O. Howard,* . . . had never been heard during my younger days, and flies were considered a necessary though, of course, unpleasant nuisance. They swarmed in the houses, for screen had not been then invented, and mosquito netting had not come into use. We used to have a lively time driving the flies from our house when they had become too numerous. We darkened all the windows but one, then, with brushes made of strips of tough paper fastened to the end of a short handle, we

*Dr. Leland Ossian Howard (1857-), Washington, D. C., became assistant entomologist of the United States Department of Agriculture in 1878; from 1894 to 1927, inclusive, he was chief of the Bureau of Entomology.

would keep the flies in motion, until in desperation they would move out through the open lighted window as fast as they could. In a short time they would all be back again and the same drive would have to be repeated. It was common for bushy tops of asparagus to be hung from supports of the ceiling for the flies to perch on, to keep them from the walls and the furniture, on which they might leave fly specks. In the fall, when the nights grew cool, we would leave a window open all night, then in the morning, the flies, torpid from the chill air, could be swept down, gathered and burned. Another method was to sprinkle a little sugar on live coals on an ash shovel and the smoke from the sugar stupified the flies so that they would be easily disposed of. Even in my boyhood a few smart people would fasten thin cloth across the outside of windows that were especially exposed, but this device was seldom seen in use. For many years we used fly covers on our dining table, wire-woven hemispheres of various sizes, adapted to fit vegetable dishes, butter and meat, bread and cake. These covers were fitted with a small knob at the apex by which they could be lifted from the protected dish when necessary.. These devices were far ahead of nothing, but were a perpetual nuisance at meal time.

Even scientists of that day, and for many years afterward, did not know the habits of the common house fly, nor where they bred, and careful study and observation were required to learn these elementary facts. Of course, the proximity of stables and farm yards was responsible for the swarms of flies that invaded houses at that time. Even in the smaller cities nearly every family had a cow or a horse on the premises. In these days it is not easy to imagine the conditions that prevailed sixty or seventy years ago, when flies were insisting on a place in even the best families.

Until 1901, when the Olmsted County Board of Health was established, the county supervisors, village trustees and city council were responsible for measures of public health and sanitation. The nuisance of straying domestic animals was first to receive attention in Rochester and in the villages. At a town meeting in Rochester in May, 1858, a law was passed unanimously by the city officers requiring owners of hogs to keep those animals from running loose about town, and imposing a fine of one dollar on the owner every time his hogs were found in the streets. Additional orders of the sort were issued annually in Rochester well into the sixties, and there were discussions of whether to "fence in or fence out." Editors wrote dramatically about many swine running at large, to the disgust, damage and annoyance of the orderly public; about cattle ranging the streets, stealing hay from wagons, tearing open bags of grain, and damaging coats, cushions and other articles left in vehicles; and about sheep: "Aside from the noxious effluvia arising from the herding of droves of diseased sheep about our residences, they are quite likely to monopolize the fresh pastures that environ our city and have hitherto afforded free grazing to the poor man's only cow."

The Rochester newspapers protested, in May, 1864, about the stench from twenty dead horses lying "without burial" on the banks of the Zumbro in midtown. The editors deplored the condition of the city's cemeteries, and they described then and for many subsequent years, muddy streets, stagnant pools on Broadway, filthy stables, outhouses and garbage reservoirs, and heaps of organic refuse in alleys and beside kitchen doors, all of which breaches of sanitation menaced the purity of wells. There were piles of ashes in the main streets, obstructing gutters and sidewalks and, in winter, interfering with the sleighing. Throughout the city, cellars were dirty and littered, even foul, and some of them in the business section served as places for butchering poultry and calves. In fact, one gains the impression that noxious effluvia constantly rose from and hovered over the community and that sanitation in villages of the county was comparable to that in the county's only city.

The first city board of health in Rochester, in 1858, apparently was not active. In June, 1864, when conditions of sanitation had become objectionable, the city fathers appointed a board of health of three lay members. In 1865 this board

was succeeded by a board of three physicians, Drs. W. W. Mayo, J. S. Allen and H. Galloway. In the next several years open letters on public health and sanitation were issued from time to time by the board and published in the newspapers. In 1866 City Ordinance No. 20 made new provisions for creation of a board of health of three persons, two of whom should be physicians, and defined the duties and powers of the board in "cleaning and cleansing" the city. From then through the next six years, it is evident that the Drs. E. C. and E. W. Cross, Mayo, Galloway and certain other representative physicians were, two at a time, on the the city board of health and active in a campaign for better conditions of health and sanitation. Their notices to the public and their reports to the city council evince their thoroughness. In 1874 conditions had so changed that a local editor, embittered by such zeal, inquired because the board of health had insisted that no more manure, garbage or other filth be thrown in the alleys, "What are the alleys for? Are they for traveling, parks, or boulevards?"

From 1872, the year in which the Minnesota State Board of Health was established, the following physicians were among the officials of public health and sanitation in Rochester: in 1872-1879, Drs. G. W. Nichols, E. C. Cross and E. W. Cross; in 1880-1881, Drs. E. C. Cross, W. W. Mayo and S. W. Gould. Dr. E. W. Cross next served with others until 1883, when Dr. F. R. Mosse and Dr. W. J. Mayo became health officer and secretary, respectively; in the succeeding term Dr. Mayo was health officer and Dr. Mosse, secretary. Dr. Mosse continued to serve most of the time as health officer into 1896. He was followed by Dr. A. S. Adams, who was health officer into May, 1912, when he was succeeded by Dr. C. H. Mayo, who continued as chief of the public health department of the city until shortly before his death, twenty-seven years later.

Dr. W. J. Mayo in 1892 was appointed a member of the Minnesota State Board of Health, and he so served until he resigned in January, 1900, when Governor John Lind appointed Dr. C. H. Mayo to the vacancy.

In the villages of the county, prior to 1872, the program of public health and sanitation was in degree like that in Rochester, and after 1872 showed comparable improvement. Record of village health officers has not been available; in the later decades of the period the names of physician health officers in the different communities appeared occasionally in the local newspapers.

With the organization of the Minnesota State Board of Health there began more effective control of public health in all counties, control that was strengthened by subsequent legislation and by "sanitary conferences" of boards of health, city, township, county and state, for the purpose of awakening public conscience and satisfying public curiosity regarding sanitary matters. The programs consisted of addresses, illustrations and scientific demonstrations bearing upon the duties of the citizen in the work of public health. One such conference was held in Rochester on May 29, 30 and 31, 1888, at which the speakers were Professor W. W. Folwell, Dr. Franklin Staples, Dr. A. T. Conley, Dr. C. N. Hewitt, and Dr. W. W. Mayo, all of Minnesota, and Professor G. Armauer, of Bergen, Norway, surgeon of the Leper Hospital of Bergen. Professor Armauer lectured on the bacteria of spedalsked (Norwegian leprosy) and gave a microscopic demonstration.

From the beginning a difficulty in enforcing measures of health and sanitation in Minnesota lay in the fact that the majority of health officers worked for little or no salary. As late as 1898 more than half were not paid, and most of the others received not more than $20 a year. Complicating the situation further, the duties of health officers in abating nuisances, maintaining public sanitation and dealing

with epidemic diseases were obligatory, but means for performance of these duties were at fault or in dispute. Through the nineties special effort was made to secure not only suitable compensation for health officers but also special funds for dealing with emergencies of sudden infectious diseases and, particularly, adequate executive machinery to enable health officers to act effectively.

Judging from local records of its earlier decades and from reports to the state board of health, Olmsted County was not afflicted with epidemics prior to 1900, although in the early period it had its share of almost annual sporadic outbreaks, some of them severe, of measles, scarlet fever, diphtheria and smallpox. Much of the difficulty in controlling smallpox in those years was due to diagnosis of the disease by irregular practitioners as French measles, or measles, or chickenpox, as well as to the lack of authority, already mentioned, vested in health officers, and to indifference on the part of the laity.

The experience of Olmsted County in dealing with epidemic diseases, especially smallpox, was similar to that of other counties. In 1860 vaccination against smallpox was recommended by physicians, but it was long before consistent attempt was made to influence public opinion. In times of emergency, then and decades later, some of the people would respond to the urging of private physicians and health officers and would accept vaccination, but the majority were indifferent or antagonistic. In the late nineties, when again smallpox was prevalent and was increasing, the Minnesota State Board of Health adopted a resolution, on July 11, 1899, that "in all schools a certificate of vaccination must be required from each pupil before admittance to the fall term." And in the autumn, health officers, teachers and school officials in Olmsted County and other counties were trying to enforce that resolution as a ruling.

In Rochester a city hospital or pest house was built in 1869, of which it appears that the caretaker was the chief occupant. In 1889 Health Officer F. R. Mosse was urging the need for a pest house. In reporting to the state board, he said, "Our city pest house was blown away in the cyclone of 1883 and we have had no need for one since, but we should be ready to care for cases of contagious diseases. St. Mary's Hospital has no convenience for the care of such cases, and we are informed that the hospital authorities will make no extensions this year, and it is doubtful if they ever decide to place a pest house on their grounds." Finally, however, the lack was filled by St. Mary's Isolation Hospital, which was opened by the Sisters of St. Francis on June 14, 1918.

The first city water system of Rochester was acquired in 1886; until then private wells supplied homes and business buildings. In the new system a series of large wells near Bear Creek, in East Rochester, supplied the water, which was forced to a standpipe on College Hill, on the then western edge of Rochester, and thence distributed in mains. Two years later fountains and drinking troughs "for man and beast" were erected, on standards of Mantorville stone, in Central Park, at the head of Broadway, and on street corners. This water system supplied the city until after the turn of the century.

Slaughter houses for decades were a nuisance in the city of Rochester. One such place was condemned in 1886 and another, on Bear Creek, in 1890, at which time the State Board of Health recommended the construction of a municipal abbatoir. In the summer of 1891 the secretary of the state board responded to an appeal from the city health officer by saying that although the city officer could not control the operation of the local slaughter house, he could condemn the meat after it had been brought inside the city and offered for sale. Ultimately the problem was solved.

The paving of Broadway, the chief business district, came toward the close of the century. This street, on which were hitched thousands of teams of horses in the course of a year, long was described as a veritable barnyard.

Rochester was thirty-seven years in achieving a sewerage system. The first sewer in the city was a private one, built in 1869, extending from the new and, for time and place, magnificent Cook House, to the Zumbro River. Thereafter, at intervals for many years, the city board of health campaigned for a city sewerage system. In 1888 sewage from the state hospital, emptying into Silver Creek, in East Rochester, created an emergency, which Dr. C. N. Hewitt, of the state board of health, solved on the appeal of the Rochester board by ordering a special method of disposal for the state hospital, which promptly was carried out; it was not until after 1900 that the sewers of the hospital were connected with the city sewers. The first city sewer ran the length of Broadway and empied into the Zumbro River. Before the sewer was built, in 1895, there was much conferring to gain permission from the state board of health to empty the sewer into the Zumbro near the bridge at the north end of Broadway. The following interesting item appeared in the *Record and Union* of July 20, 1894:

> *The Sewerage Matter:* Dr. W. J. Mayo who came down from Waseca [from his summer cottage] this morning reports that he was at the State Board of Health when they discussed the matter of allowing Rochester the privilege of connecting its proposed sewerage system with the river.
>
> There was no permission to do this, but at the same time permission is not denied. This river does not run through any towns below except Hammond's Ford, and by the time it reaches there has been joined by the waters of two other rivers and is supposed to have run far enough to purify itself. The upper line of the river is through badlands and ravines, and therefore our sewerage system will not materially affect those below us. At the same time, if the State Board of Health gives permission to Rochester to connect a sewerage system with the river, other cities will demand the same right. The course which will be pursued will be to put in the sewerage system and allow it to run into the river, and then the State Board of Health cannot consistently order it out without doing the same by Saint Paul, Minneapolis and many other cities of the state, which all have systems emptying into rivers. The Board has indeed, given intimation that our system will be unmolested if put in here. Mayor Witherstine expects to make one more effort to gain formal permission, but if the same is not gained, it will have no material effect on the enterprise.

Rest Room for Women and Children.—In 1896 the Woman's Club of Rochester, at the suggestion of Miss Evans, of Carleton College, Northfield, made an important contribution to public welfare. From earliest days Rochester was the trading center of the county and attracted farmers and their families from all parts of the region. A few of the women and children went to hotels after shopping was done and while the heads of households were transacting business, but most of them waited wearily wherever they could, on the streets and in stores. At the instance of the Woman's Club, merchants pledged monthly contributions, as did the city, toward the maintenance of a rest room for women and children from the country. The rest room, the first of the sort in the state, under the superintendence of the club duly was opened in a small room in the business section of town, and a few years later was established in larger, suitably furnished quarters under the immediate supervision of a matron. The room continued in use until changing conditions obviated the need for it.

The Red Cross Society.—In May, 1898, the Red Cross Society came to Olmsted County, first in Rochester, through the agency of Dr. H. H. Witherstine, in response to the urgent request of Miss Kate B. McKenzie, of Minneapolis, assistant

corresponding secretary of the Red Cross Society. Miss McKenzie wished the ladies "to unite in the work of furnishing bandages, pillow cases, night shirts, et cetera, for the soldiers who may be wounded" (during the Spanish-American War). The original idea was that the work in Rochester should be subsidiary to that in Minneapolis, but Rochester chose to establish its own society, with headquarters at the Woman's Club rooms, and the organization soon looked forward to membership in the National Red Cross Society. Contributions of money, material, sewing machines and work were asked, and shortly there were published in the local papers accounts of cash and material sent by the local society to various military hospitals. Soon after the society was organized in Rochester, auxiliary branches were formed, in Eyota and elsewhere in the county, and in neighboring counties.

Civic Improvements Advancing Public Welfare.—In January, 1897, Rochester then a city of 6,000, had obtained all that she asked for and other improvements were in a fair way to consummation; these improvements were of advantage to the county as a whole. There were stone pavements and broad plank walks, a complete telephone system with 165 subscribers. There were gas and electricity, pure city water, miles of tile sewers, free U. S. mail delivery, six well-located and well-equipped public school buildings, besides St. John's and the Academy of Lourdes, two private schools and a kindergarten coming, as well as a promised library building. There were twelve churches, St. Mary's Hospital, the Second Minnesota Hospital for Insane, the Conley Camera Factory, a courthouse and a jail. Predicted were a three-set woolen mill, a board of trade, a new opera house, a new Masonic temple, street cars, an additional railroad from Duluth, and possibly the Chicago Great Western Railroad from Mantorville and the Winona and Western from Simpson. Many of these advances were realized before 1900.

Organization of Medicine

To the advance of public welfare in Minnesota nothing contributed more than increasing awareness on the part of regular physicians of, first, the menace of quackery and, second, the need for improved medical education, awareness that led to medical legislation and medical organization. The move toward improvement received early impetus in the middle sixties when physicians and surgeons returned from the Civil War to find that innumerable quack practitioners, some of them professing to have been army surgeons, were invading the home fields.

Medical Legislation.—A territorial law of Minnesota in 1851† provided for the examination by medical societies of applicants for license to practice and for the issuance of diplomas by the presidents of such medical societies. The law specified that an applicant for license to practice must be twenty-one years of age, have had a good English education, and have studied medicine at least three years with some respectable practitioner. In March, 1869, owing to the efforts of the Minnesota State Medical Society, aroused by the increasing influx of irregular practitioners, the legislature of Minnesota enacted a medical law that made it unlawful for a person to practice medicine in Minnesota who had not attended at least two full courses of instruction, who had not been graduated in some school of medicine either in the United States or in some foreign country, and who did not possess a cer-

†The Public Statutes of the State of Minnesota. (1849-1853.) Compiled by Moses Sherburne and William Hollinshead, Esqs., Commissioners. Saint Paul: Pioneer Printing Company, 1859. Pp. 277-279. Also, the Revised Statutes of the Territory of Minnesota, passed at the session of the legislative assembly commencing January 1, 1851, pp. 29 and 126. References through the courtesy of Dr. James Eckman, Division of Publications, Mayo Clinic, Rochester, Minnesota.

tificate of qualification from some state, district, or county medical society. The law stated further that the failure of a practitioner to file a sworn copy of his diploma or certificate, before October 1, 1869, in the office of the clerk of the district court of the county in which he resided or kept his office, should constitute prima facie evidence that he had not attended lectures or been graduated from any school of medicine. It is noteworthy that the provision referred to a diploma or a certificate and not to a license to practice medicine. The phrasing of the law inadvertently left loopholes which enabled irregular practitioners to organize and to gain recognition. Because of this defect the bill was a failure and was repealed in 1870.

The first medical legislation of merit in the state, the Minnesota Medical Act or "Diploma Law," was enacted on March 15, 1883, and was designed to protect the people of the state from "the manifest dangers of quackery and the less obvious perils of incompetency and ignorance." Under this law licenses to practice medicine were issued to physicians who held diplomas from recognized medical colleges and to physicians lacking such diplomas who passed the examination of the newly established Minnesota State Medical Examining Board. Exemption certificates were given practitioners who finished evidence of having practiced medicine in Minnesota for five years prior to the passage of the act.

In 1887 the law of 1883 was repealed and a new act, designed to regulate the practice of medicine, to license physicians and surgeons and to punish violations of the law, was passed. This act, in due time, was followed by other legislation as new problems arose. When, in 1927, the Basic Science Law in Minnesota was passed, it required that all practicing physicians should file their original Minnesota licenses with the clerk of district court in their respective counties. Those older physicians who had been licensed under the law of 1883 and duly had filed their licenses were fortunate. Those who had neglected to file and who had lost the early licenses, and in this group were some of the most able and eminent, found themselves under the necessity of appealing to the State Board of Medical Examiners for certified copies of the original documents in order to place themselves on record as in good standing.

Medical Societies.—An early evidence of the changing attitude of physicians toward the art, science and ethics of medicine was effort toward the organization of county medical societies, long urged by the American Medical Association and by state medical societies. In 1872 there were in Minnesota six county medical societies, all of which were affiliated with the state society. Of these the groups in Winona and Fillmore Counties were organized in 1866; in Olmsted and Wabasha Counties, in 1868; and in Ramsey and Hennepin Counties, it is believed, in 1870. During 1872 the Dakota County Medical Society and the St. Croix Medical Society became auxiliary to the state society. The county societies gave impetus to professional advance and helped to establish a pattern of progress. Physicians of one county not only fostered their own local society, presenting reports and papers before the group, but also encouraged the formation of societies in neighboring counties and contributed to their meetings. Individually these physicians more and more were stimulated to exchange visits with other physicians throughout their region for consultation and for observation of surgical operations of special interest, to join in organizing district groups, to attend sessions of state and national medical societies, to travel far to observe work in hospitals of large cities and to take postgraduate study at accredited medical schools.

(To be continued in December issue.)

President's Letter

DOCTORS ON THE ALERT

Unlike the political "organizers" who can devote their full time to the promotion of schemes embellished with such phrases as "attaining the highest level of health," "free medical care for everyone, everywhere," the men and women of medicine are confronting a scientific challenge today that supersedes in importance even the economic and sociologic threats devised by these organizers.

Doctors today are in a dual race. Fighting to outdistance with facts the ethereal promises of those who are trying to socialize medicine, the doctor cannot pause, even momentarily, in his constant striving to keep abreast of medical progress.

So fast are these cures and hopes for cure being developed and so intense is the public's interest in them, that often we read newspaper and magazine accounts of the latest discoveries in drugs, serums and operating techniques before the profession itself is informed about them.

An informed and ever-curious public speaks intelligibly these days of the effects of penicillin and aureomycin and the newest techniques in surgery.

Research centers are co-operating with this interest and helping to inform the public. Newspapers and magazines devote special sections to medical news and assign qualified reporters and feature writers to translate the scientist's reports into lay language.

With revolutionary developments emerging every day from the medical laboratories of the nation and with informed and, therefore, more co-operative patients to work with, the doctor of today cannot fail to meet both the scientific and economic challenges which have been offered to him.

Equipped with the knowledge he gains from reading the medical literature, visiting clinics and hospitals and continuing his postgraduate work by means of short courses, the modern physician can counter, with the reality of medical care, the unfounded promises of government control.



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

MEDICAL PROFESSION INVESTIGATED

IS IT POSSIBLE that we have come to such a state of affairs in our beloved free country that the government we have set up to operate for the general welfare is now going to use its invested power to interfere unjustifiably with our freedom of speech and action? Certain groups of our citizens have been investigated by the Antitrust Division of the Department of Justice of our federal government in recent years and have been brought into court accused of infringement of antitrust laws. Rather than go to the expense of costly litigation, these groups have entered pleas of *nole contendere* and have paid fines even, though they have felt a reasonable certainty of their innocence.

Is the medical profession about to take its turn in an investigation suit?

We, as American citizens, elect representatives to pass certain laws which are enacted by majority action and also elect an executive, the President, to enforce the laws. This is legislation by representation. But what has happened? Officials in the Executive Department, for the most part appointees, propose laws for the socialization of our economy, the practice of medicine in particular. The physicians of the country, as represented by the American Medical Association, opposed such a proposal and in November, 1948, voted to assess themselves to provide funds to present their viewpoint to the public. A month later the Department of Justice called on the Chicago Medical Society secretary to check the Society's records in connection with an alleged antitrust investigation. In the early hours of February 10, 1949, the room of the Board of Trustees of the AMA was broken into and records searched by persons unknown. A few weeks later Administration leaders began threatening medical societies and medical men with investigation as part of their campaign to discredit and intimidate the medical profession. On February 28, 1949, one of the National Press Associations carried a dispatch from Washington quoting Government officials as stating that antitrust actions would be started against several medical societies soon after the Compulsory Health Insurance drive was started in Congress.

This threat has now materialized. During the past few weeks some twenty-two medical societies, including the AMA headquarters, state medical associations and allied groups, have been or are being investigated by the Antitrust Division of the Department of Justice. More investigations are said to be in the offing.

Are we just using our imagination when we see in this train of events an attempt to discredit the medical profession because of its opposition to certain socialistic elements in Washington?

If any of the organizations of the profession or any of those sponsored by the profession are knowingly or unknowingly infringing on any antitrust laws, we want to know in what way and we shall be only too willing to make the needed correction. But if the present widespread investigation by a branch of the federal government is being conducted in an effort to intimidate and discredit the profession for political purposes, we venture to predict that it will not be successful.

Whatever monopoly in the care of the sick is possessed by the medical profession has been given by law. It should be more of a monopoly than it is. The Blue Cross and Blue Shield cannot with any justice be accused of possessing or seeking a monopoly in their respective fields. We shall await with interest the results of the various investigations being presently conducted. In the meantime, we as a profession will continue to exert our right of free speech to oppose the socialists in Washington and elsewhere who would give the government a monopoly in the medical care of our citizens. Is it possible that the Department of Justice of the government is about to accuse the medical profession of monopoly in order to further governmental monopoly in the realm of medical care?

HOSPITAL CARE OF VETERANS

THE SUBJECT of the medical care provided for veterans by the federal government has been touched upon editorially in MINNESOTA MEDICINE on numerous occasions. We have recently received a report on the Hospitalization of Veterans by the Committee on Public Health Relations of the New York Academy of Medicine* which is most complete. Its recommendations merit serious consideration.

We have always taken the stand that nothing was too good in the way of medical care and compensation for the veteran for any disability sustained in the service of his country. But we have been equally vocal in maintaining that the government is not obligated to provide hospital or medical care for veterans for non-service-connected disabilities.

After World War I the Veterans Administration initially provided hospital care only for veterans with service-connected disabilites. As early as 1924 the present policy of hospitalizing veterans for non-service-connected disabilities began, and veterans unable to pay the cost of hospitalization were admitted, providing beds were available. In 1934 a law was passed requiring the veteran to affirm under oath, under penalty of $1,000 fine or a year in jail, that he was unable financially to provide hospital care for himself. No provision was made for checking his statement, and it is said no veteran has ever been prosecuted, although it is known that many false declarations have been made.

There are at present 18,733,000 veterans—a sizable portion of the population. To provide total hospital care at government expense for this large section of our population would entail the construction and staffing of many new hospitals at the cost of billions to the taxpayers. To any fair-minded citizen such a program is unjustified. And yet this was apparently the program initiated when Congress, in 1947, appropriated three-quarters of a billion dollars for the construction of eighty-nine new institutions plus additions to existing hospitals which would add 54,000 new beds. The veterans organizations want to have 300,000 beds available in twenty years, which would mean 20 beds per 1,000 veterans, over four times the 4.5 beds per 1,000 now available for the civilian population. Such an objective is obviously absurd. The Medical Director of the Veterans Administration has estimated that 120,000 beds are about all that can be staffed at present.

With the appearance of the Voorhees report of the Hoover Commission, which showed the gross extravagance of the plans for hospital construction and the great economy that could be effected by combining the hospitals of the Veterans Administration, Public Health Service, general hospitals of the armed forces and others under a National Health Department, be it said to the credit of President Truman that he cancelled the plans for the construction of twenty-four of the proposed hospitals and a reduction in the size of fourteen others at a saving of $280,000,000 and a reduction of 16,000 in the number of beds authorized.

The report of the New York Academy of Medicine states that on January 31, 1949, there were 104,414 available beds in veterans hospitals occupied by 97,079 patients. In addition to this there were 13,474 veterans in army, navy, state and county hospitals—a total of 110,553. Approximately two-thirds of these were non-service-connected cases. Of the 36,732 service-connected cases only 5,734 were general medical and surgical cases, the rest being psychiatric and tuberculous. Of the 73,721 non-service-connected, 34,283 were general medical and surgical cases, the rest being psychiatric and tuberculous. There were therefore about six times as many general medical and surgical cases that were non-service-connected as there were service-connected.

The 39,538 patients with non-service-connected psychiatric and tuberculous disease now being cared for in veterans hospitals have disabilities which generally require tax-supported care. Doubtless state and other institutions for psychiatric and tuberculous patients could not accommodate this large number of additional patients.

The recommendations of the committee of the New York Academy of Medicine are in brief:

> That federal responsibility for hospital care should be limited to those veterans with service-connected disabilities except that all tuberculous and mentally ill veterans should be included irrespective of service connection and that the medically indigent and veterans with service-connected disabilities who develop general medical and surgical conditions unrelated to service should also be included.
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> That Congress amend the law making it possible for the Veterans Administration to investigate claims by

*Bulletin, New York Academy of Medicine, 25:567, (Sept.) 1949.

veterans of inability to pay for non-service-connected disabilities.

That Congress place a limit on the number of beds available for veterans and that that limit not exceed 120,000.

That the 46,000 beds in various governmental hospitals, which according to the Voorhees report of the Hoover Commission are at present unoccupied, be used before new hospitals are built.

That veterans' hospital services be coordinated with voluntary hospitals in order to prevent further costly duplication of facilities.

That needlessly long stays in hospital be shortened and a strict admission policy be based on necessity.

That veterans use their voluntary insurance covering medical and hospital care and that the recommendation of the Voorhees Committee that the Government provide insurance for those veterans unable to afford it be considered.

It is evident from this report that the 104,414 available beds in the veterans hospitals are more than sufficient to care for the 36,732 service-connected cases and the 39,538 non-service-connected psychiatric and tuberculous cases. It is true that the available beds are not sufficient to accommodate the additional 34,283 non-service-connected general medical and surgical cases now being cared for by the VA, but it is difficult to believe that this number are bona fide medically indigent.

The Veterans Administration claims that more than the approximate 6,000 service-connected general medical and surgical cases are required to provide a sufficient variety of clinical material of interest and educational value to the medical staffs. The report contends that another 6,000 general medical and surgical cases of non-service origin from among the medically indigent veterans rather than the 34,283 presumably indigent veterans now being cared for should be sufficient to provide the needed variety. Even if it should prove that all the 34,283 presumably indigent veterans with non-service-connected disabilities are indigent, the 46,000 vacant beds in other government hospitals would obviate the need for the present hospital construction being carried on by the Veterans Administration.

The Committee of the New York Academy of Medicine has done a real service in clarifying the present status of the veterans hospitals. Even with the building program already somewhat curtailed, the total number of hospital beds should be limited to 120,000 at most. This figure is apparently going to be exceeded if present plans are continued.

MISS ELIZABETH McGREGOR AND THE GILLETTE HOSPITAL

MISS ELIZABETH McGREGOR, for thirty-five years the superintendent of Gillette Hospital for Crippled Children in Saint Paul, retired on October 15, 1949, having supervised the institution during its growth from a convalescent home to its present outstanding position.

The Gillette Hospital, which was the brain child of the late Dr. Arthur J. Gillette, was first opened in January, 1911, for the care of crippled children awaiting operation at the City and County Hospital (now Ancker Hospital) in Saint Paul or for convalescents from that hospital. At that time the hospital consisted of just two connecting wards. On October 1, 1914, when Miss McGregor arrived to take charge, the hospital consisted of these two wards and two two-storied additions in the process of construction. These additions, as a matter of fact, were not completed when all the children were transferred from the City and County Hospital in December, 1914. Dr. Gillette and his assistant, Dr. Carl C. Chatterton, were joined by Dr. Wallace H. Cole upon his return from Europe in May, 1914, and all three gave their services without financial remuneration for many years.

Upon the death of Dr. Gillette in March, 1921, the name of the hospital was changed by an Act of the Legislature from the Minnesota State Hospital for Crippled Children to the Gillette Hospital, and Dr. Chatterton was appointed Chief of Staff, he supervising the care of the boys and Dr. Cole the girls. These members of the staff received no remuneration until 1938. Since then stipends have been paid all members of the orthopedic staff which now consists of five additional Twin City orthopedists. The fine spirit of cooperation which has always prevailed at the Gillette Hospital, and which is so necessary for successful operation of a hospital, accounts, according to Miss McGregor, for the high standing achieved and maintained by the hospital. It should be stated, however, that it is well recognized that staff cooperation depends much on the diplomacy and executive ability displayed by the superintendent of the hospital.

Miss Elizabeth McGregor's academic education and early experience specially prepared her for the responsibilities she so well assumed at the Gillette Hospital. She graduated from the University of Minnesota in 1901 with a degree of

Ph.B., one of but ten such degrees ever conferred at the University. This degree was awarded for majors in mathematics, psychology and sociology with a large sprinkling of the arts. After graduating, Miss McGregor taught in the public schools in Saint Paul for six years and then obtained a position with the State Public School at Owatonna (now defunct) for six years, in connection with which she visited all parts of the state in her investigation of dependent children who were candidates for the school. She served as superintendent of the school the last three years at Owatonna.

The onset of World War I cut short the continuation of a trip on the Continent, and Miss McGregor was forced to return to England from Belgium just before the shooting began. During the war, however, she spent a year and a half in the service of the organization known as the American Fund for the French Wounded and later with the French Red Cross stationed at Neuf Maison, some ten miles south of Nancy in France.

It was at Miss McGregor's instigation that the Gillette Hospital was one of the first in the country to be investigated and approved by the American College of Surgeons. This took place in 1922, and it is a source of considerable pride to the former superintendent that it has been approved each year since then.

In 1933, the American College of Hospital Administrators was organized with 100 men and thirteen women charter members. One of the thirteen women was Miss McGregor. Only individuals trained in hospital administration are approved by this organization.

Miss McGregor can take credit for a large share of the accomplishments and the high standing of the Gillette Hospital to which such a great portion of her life has been devoted. She has moved into her own home at 509 South Cretin Avenue, Saint Paul, which she purchased a year ago. Her responsibilities now will be her garden, books and housekeeping, and she is leaving the administration of the hospital to Miss Jean Conklin, whose services in the various departments of the hospital have specially prepared her for her new responsibilities.

KETTLE AND POT

Those government officials who look down their noses at the American Medical Association's efforts to combat compulsory health insurance display the typical bureaucratic approach to all controversial topics.

The administration says its program will not lead to socialized medicine. We may never know just how many dollars of everybody's money has been spent to propagate that bit of nonsense, but we can be sure the sum will run to many more millions than the AMA has collected from its members. The money spent by organized medicine will come from the pockets of the contributors and not from the public kitty into which everyone who buys so much as a loaf of bread must pay regardless of his views on the welfare state.

Few opponents of compulsory health insurance are so dimwitted as to suggest that the AMA is a body of supermen who can't be wrong about anything, many doctors are unhappily aware of the fact that their organization's policies have sometimes tended to be unnecessarily restrictive.

But if the AMA is several giant strides away from omniscience, the same can be said of the bigwig bureaucrats who keep the government mimeographs and presses turning twenty-four hours a day on behalf of their pet panaceas.

Propaganda money is "slush" when the AMA spends it and a perfectly legitimate federal function when government lays it out. A neater case of the pot sneering at the kettle would be hard to find.—Editorial, *Chicago Journal of Commerce,* May 14, 1949.

VESICOVAGINAL FISTULA CURED WITHOUT MAJOR SURGERY

(Continued from Page 1114)

blue solution. No further dripping of the blue colored solution came from the site of the vaginal opening, proving that the tract was closed. A self-retaining catheter was again placed in the bladder. The surface of the fistulous opening in the vagina was wiped off with an alcohol sponge, and a pack of vaseline iodoform gauze was placed in the vagina. The retractors were then removed. When the patient was back in bed, a rubber tube was attached to the self-retaining catheter leading to a bottle and the catheter was left open, allowing continuous drainage of urine. The vaginal pack was changed several times in dressings at the bedside, and on the tenth day the patient was allowed to be up and around with the catheter draining into a bottle strapped to the patient's thigh.

At the time of the injection the patient did not have cystitis, and special care was taken to be sure that the patient did not develop cystitis afterward.

At the end of three weeks the patient was very carefully examined, and the fistula's tract was found to be healed. The continuous open drainage was allowed to proceed for one more week and then was removed. A final cystoscopic examination was made about two months later and the vesicovaginal fistula in the bladder had healed and appeared like a dimple-like depression. The site of the vesicovaginal fistula in the vagina appeared healed and only a slight depression was visible.

Thirteen years have now elapsed since this sclerosing injection treatment of the fistula was carried out, and we believe that a permanent cure can reasonably be presumed to exist.

211 East Second Street

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

HUMPHREY NOW OPPOSES GOVERNMENT MEDICINE

Senator Hubert H. Humphrey, one of the sponsors of the Administration's compulsory health insurance bill, has withdrawn his support from the measure, at least for the present.

After many conferences and communications with Minnesotans, and much careful thought and analysis of the proposals for tax-supported medical and hospital care, Senator Humphrey declared October 20 that voluntary prepayment plans should be given a chance to do the job.

"I think it (the Truman plan) is premature," he said. "If it were presented for a vote on the floor of the senate, I would not support it."

Like Auto Policy

"What we need is possibly something similar to auto insurance, where you have what is called a deductible policy. . . . I feel this can be handled on a voluntary basis if there is a will to do it."

Humphrey said that he was giving thought now to plans for prepaying hospital and surgical care for the chronically ill.

"The medical profession ought to be given plenty of opportunity to lend its efforts to a more constructive program."

News of this shift in Humphrey's thinking is gratifying to Minnesota doctors and may be regarded as a constructive move by the Senator, along the lines of American governmental philosophy.

Humphrey added that present voluntary plans are inadequate and that the medical association should spend more time and money in promoting better health coverage.

Doctors of Minnesota are in accord with this statement, urging further extension of voluntary medical care insurance and agree with the senator that more answers must be sought to the problem of chronic illness.

The co-operation of the medical profession will always be pledged to forward-looking programs, developed with careful regard for the tested and proved procedures of the past.

Three Against It

Senator Humphrey brought to three the number of Democrats who expressed, within one week, their opposition to the President's plan for health insurance.

Senator Paul H. Douglas, Illinois, addressed a meeting of the St. Paul Jewish Community Center October 19 and declared:

"I think doctors have some reason to be afraid of too many forms and too much red tape, and I think there will be some patients who would enjoy ill health if they never had to pay at all."

To Oscar Ewing, federal security administrator, he attributed the creation of the Truman-plan bill.

"I say, let the general practice of medicine go on just as it does today. But recognize the catastrophic illness, which peculiarly lends itself to the insurance principle, the principle that it is better that many make small payments than that a few should take large losses.

"In short, if we could cut out some of the foolishness of Mr. Ewing, why couldn't we all get together?"

Herbert H. Lehman, New York candidate for the Senate, has flatly stated his aversion to the Truman plan. These three repudiations of a Truman "must" have led political writers to believe that there is a definite split among Democratic liberals on this issue.

NEW STATE LAWS OF INTEREST TO DOCTORS

"Among the new (state) laws and regulations are many of immediate interest," points out Dr. Dean S. Fleming, chief of the Section of Preventable Diseases at the Minnesota Department of Health. "These include the county board of health act, cancer statistical research service act, tuberculosis control act, mosquito abatement act, milk pasteurization act and the boat safety act."

"New regulations applicable to scarlet fever, scarlatina and epidemic sore throat now require that persons with these diseases must be isolated until complete recovery with a minimum isolation of seven days. A warning sign replaces the old quarantine placard, and restrictions of other members of the household have been liberalized."

The regulations on these ailments now read:

Regulation 1200. The local health officer shall post in a conspicuous place upon the entrance to premises where scarlet fever, scarlatina, or epidemic sore throat exists, a notice in words and form as follows, inserting the name of the disease in the proper blank: Warning. The public is hereby warned that there is ——— in this household. Removal of this placard without the authority of the health officer is a misdemeanor punishable by law.

_____ _____.
Health Officer Date

Regulation 1201. (repealed).

Regulation 1202. A person with scarlet fever, scarlatina, or epidemic sore throat shall be isolated until complete clinical recovery and until all abnormal discharges from the nose, throat and ears have ceased, and the mucous membranes have returned to normal appearance, and the swollen and suppurating glands have subsided, provided that such isolation shall not be terminated until at least seven days from onset of the disease.

Regulation 1204. All children of the household where scarlet fever, scarlatina, or epidemic sore throat exists, shall be restricted to the household premises for the duration of the isolation period of the patient. Adult members of the household, except those caring for the patient and those engaged in teaching or other work bringing them into contact with children, may be released from restrictions at the discretion of the health officer, provided they are free from symptoms of the disease.

Regulation 1205. (repealed).

The Department of Health has mailed copies of *Minnesota Supplement No. 1 to State Health Laws and Regulations* to health officers of Minnesota counties, cities, villages and townships. This supplement contains the laws pertaining to public health enacted by the 1949 Legislature and regulations adopted by the State Board of Health since the issuance of January 1, 1948, edition of *State Health Laws and Regulations.*

YOUNGDAHL DEFENDS PRIVATE ENTERPRISE

Governor Luther Youngdahl, in his column released to community newspapers throughout the state, came to the defense of private enterprise recently.

"In these days when there are so many distractions, we lose sight sometimes of its importance, and designing men make progress in their effort to tear down this heritage which has contributed so much to the greatness of our country," he wrote.

"The private enterprise system and the opportunity for individual initiative it offers have been a major factor in the growth of our state and nation. It rewards the farmer for his work, reaches out a helping hand to the businessman and brings to all of us more of the good things of life than any other plan ever devised."

Concluding the column, he cited the progress made in Minnesota under the system of private enterprise and added:

"Minnesota has not neglected the needs of its people while making its material progress. Money paid out in state aid to local schools, for instance, has tripled in the past eleven years. Allowances for old age assistance and aid to dependent children have been raised more than 130 per cent in this period. Far-reaching programs to improve health have been initiated. But main reliance, if we are to have any real social welfare, must be on maintenance of an economic and social system which will encourage production."

SOCIALISTS TEACH BRITONS TEA-MAKING

The Socialist government in Britain has a special section of experts in its vast bureaucracy, devoted to teaching restaurant staffs how to make tea! The proper method of roasting beef is bound to be next, if the socialists are determined to invade even the culinary traditions of that country.

As it stands now, the British government tells its people what to eat, how much to spend for clothing, whether they can drive cars and where, as well as alloting them some four minutes of medical time with an assigned doctor.

25,000 Rules

There are, in fact, 25,000 rules covering personal affairs in Britain under the Socialistic government and the number of government employes has been trebled since before the war.

"You find it difficult to comprehend that little men are trying to destroy a great people," wrote Cecil Palmer, British journalist, as he left the United States to return home after a summer of lecturing. "We, in Britain, experienced a similar difficulty and because large sections of our people temporarily lost their sense of perspective we have marched a long way down the road to serfdom."

"I cannot believe that you are insensible of your great inheritance. I will not believe that you are capable of throwing it away. I do not believe that politics has the power to send you chasing helter-skelter after the shadow of state help when the substance of self-help and all its monuments are a constant reminder of solid achievement under liberty and free competitive enterprise."

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

230 Lowry Medical Arts Building
Saint Paul, Minnesota

Julian F. DuBois, M.D., Secretary

Three Minneapolis Persons Sentenced in Abortion Case

Re. State of Minnesota vs. Ida Peterson Chilson, Robert Charles McGowan and Irving Kaplan.

On September 19, 1949, Mrs. Ida Peterson Chilson, seventy-six years of age, 1800 Third Avenue South, Minneapolis, and Robert Charles McGowan, forty-five years of age, Maryland Hotel, Minneapolis, were sentenced to terms not to exceed four years each, in a state penal institution following their pleas of guilty on August 16, 1949, in the District Court of Hennepin County, to an information charging them with the crime of abortion. The sentences were stayed in each case by Judge Harold N. Rogers, and the defendants placed on probation for two years.

On September 29, 1949, the defendant Kaplan, thirty-eight years of age, was permitted to plead guilty, in the same case, to the charge of practicing healing without a basic science certificate. Kaplan, a registered pharmacist and the owner of the Kenesaw Drug Store at 14th and Nicollet, Minneapolis, was sentenced by Judge Rogers to pay a fine of $1,000 or serve one year in the Minneapolis workhouse. Kaplan paid the fine.

Mrs. Chilson, McGowan and Kaplan were arrested following a joint investigation by Minneapolis police officers and representatives of the Minnesota State Board of Medical Examiners into the facts surrounding the abortion on a married woman living in rural Hennepin County. That investigation disclosed that $200 was paid to the defendant Chilson on or about July 13, 1949, for the purpose of having an abortion performed. $100 of the fee was retained by the defendant Chilson, who actually performed the abortion, and the other $100 was divided equally between the defendants McGowan and Kaplan. Kaplan was first contacted about the abortion, and he in turn put the defendant McGowan in touch with the patient. McGowan took the patient to Mrs. Chilson and the abortion was performed in Mrs. Chilson's home. Evidence was also obtained that several other abortions had been performed in the same manner and with a similar division in the fees. Neither Mrs. Chilson nor the defendant McGowan are licensed to practice any form of healing in the State of Minnesota.

WELFARE STATE

Congress passed in June a record annual budget for public health service that provided increases for mental health, cancer and heart research and aid to the various states. In addition, a bill was introduced in the House, to which the medical profession certainly will not object, to raise the pay of all physicians, dentists and nurses in the Veterans Administration.

According to the terms of the Federal Security Agency's appropriations bill, forty medical and sixteen dental schools will receive $872,477 for training in cancer; thirty-one institutions, including the American Cancer Society and the American College of Surgeons will share $550,802 in special cancer-control-project grants; and ninety-nine cancer research projects will receive a total of $1,026,294.

Congress has further voted $100,000 for blue prints and specifications for the National Dental Research Institute to be built in Bethesda. (The American Dental Association favored $2,000,000 to start immediate construction.)

According to the details published in *Washington Report on the Medical Sciences* for June 27;

> National Heart Institute received a sizable $10,725,000 plus contractual authority of $5,350,000 for research and training grants. To National Cancer Institute went the record sum of $18,900,000 and, in addition, $6,000,000 in contractual authority. Another record figure of $11,612,000 was voted for mental health. And still another, $12,075,000 to National Institutes of Health, a large part of which will go for research, training, control and fellowship grants in noncategorized fields. Venereal disease activities get $16,000,000; for general assistance to the states, $16,600,000 is provided; communicable disease control functions receive $7,350,000; $167,000 is allocated for administering the Federal employe health program. For administration of the Hill-Burton hospital program, $1,200,000 was approved, obviating a drastic reduction in force which would have resulted if the Senate had yielded to the House figure of $1,000,000.

Without the aid of an adding machine, the figures mentioned seem to total $108,528,573. For no particular reason at all, snatches of a conversation at the Mad Hatter's tea party come to mind:

"'And so these three little sisters'—(said the Dormouse) '—they were learning to draw, you know—'

"'What did they draw?' said Alice. . . .

"'Treacle,*' said the Dormouse. . . .

"'But I don't understand' (said Alice), 'Where did they draw the treacle from?'

"'You can draw water out of a water well,' said the Hatter; 'so I should think you could draw treacle out of a treacle-well—eh, stupid?'"—Editorial, *New England Journal of Medicine,* Aug. 4, 1949.

*Molasses.

HEALTH AND SAFETY LAWS

Narcotic Drugs. Amidone, isobemidone, and ketobemidone are added to the controlled list of narcotic drugs (Chap. 360).

Abatement of Nuisances. In cases where a health officer abates a nuisance because the property owner has failed to act, the maximum claim of the municipality has been increased from $25 to $50. (Chap. 80.)

Indians. A commission is authorized to investigate the needs of Minnesota Indians.

Mosquitoes. If 5 per cent of the voters in a district petition for mosquito abatement, a referendum may be taken. If the referendum is favorable, a property tax of one mill may be levied to finance a mosquito control program, which must have the approval of the Departments of Conservation and Agriculture. (Chap. 404.)

Boat Safety. Boats are to be equipped with detachable anchor lines. The annual issuance of metal boat tags is eliminated. Instead a tag will be required to remain on each boat until the boat is sold, taken out of service, or otherwise removed. (Chap. 655.)—*Minnesota Health,* May, 1949.

Minnesota Academy of Medicine

Meeting of May 11, 1949

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town & Country Club on Wednesday evening, May 11, 1949. Dinner was served at 7:00 p.m. and the meeting was called to order at 8:25 p.m. by the president, Dr. J. A. Lepak.

There were forty-two members and one guest present.

There was no business to come before the Academy, so the scientific program followed.

Dr. Carl W. Laymon of Minneapolis presented a case report, and Dr. J. Richards Aurelius of Saint Paul presented his inaugural thesis.

MASSIVE METASTASIZING MENINGIOMA INVOLVING THE SCALP

Report of a Case

CARL W. LAYMON, M.D.
Minneapolis, Minnesota

Meningiomas are tumors of the meninges of the brain or spinal cord. There are several types, distinction of which depends primarily upon the morphology and architecture of the tumor cells. Most writers believe that meningiomas almost never metastasize. This is the report of a most unusual example of a meningioma which eroded the skull, invaded the scalp and metastasized to the cervical nodes. Although many sources were carefully studied, no lesion has been described which resembled this one.

From the Division of Dermatology, University of Minnesota, H. E. Michelson, M.D., Director; the Department of Dermatology, Minneapolis General Hospital, Carl W. Laymon, M.D., Director, and the Duluth Clinic.

Report of a Case

(Courtesy of Dr. Frederic T. Becker, Duluth)

V.T., a white man, aged seventy-two, developed a swelling in the right frontal portion of his scalp in 1941. The tumor gradually grew until it attained a size approximately that of the head by April, 1947. At that time the patient noticed weakness of the left arm and leg, and early in May, 1947, fell unconscious. He was admitted to the hospital on July 1, 1947, and stated that he had experienced periods of unconsciousness for several months. His friends said that there had been a loss of mental faculties for five years. There was nothing important in the past history.

Examination.—There was compressible bluish-red tumor about the size of two grapefruits in the right frontal and parietal regions of the scalp. There were



Fig. 1. Massive meningioma invading the scalp.

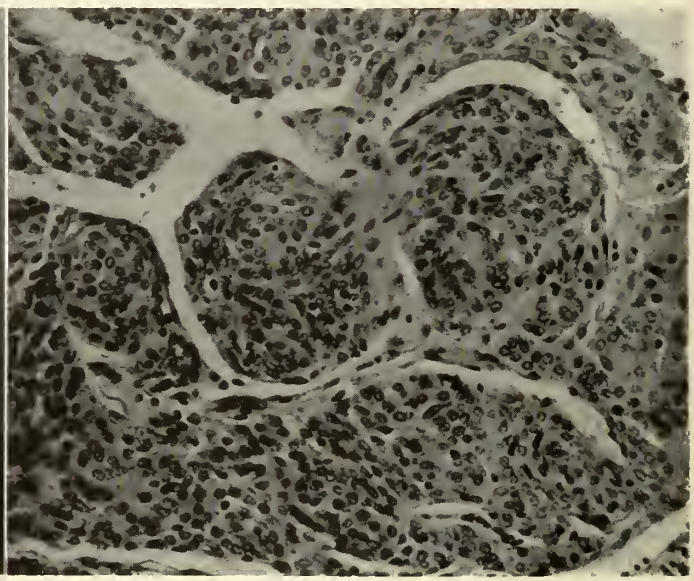


Fig. 2. Histologic section of primary tumor showing units of polyhedral and spindle formed cells. In most cases whorling of the cells is an outstanding feature.

numerous large blood vessels coursing over the surface and the hair was extremely sparse over the growth. There was a definite bruit on auscultation with a stethoscope. There were several enlarged posterior cervical nodes, one of which was about the size of an egg.

Course.—During the period of hospitalization the surgeons were reluctant to perform a biopsy of the tumor because of the possibility that the patient might die of hemorrhage. One of the enlarged cervical nodes was removed and studied histologically. Drs. E. T. Bell, A. C. Broders, H. Montgomery and others agreed on a diagnosis of malignant non-cornifying epithelioma. The patient died on January 10, 1948. The final diagnosis was made after study of tissues from the primary tumor. At autopsy it was found that the mass which infiltrated the scalp came from within the cranium through an irregular circular defect of the skull, 9 cm. in diameter. The tumor, including that part which had infiltrated the scalp, weighed 2300 grams. Except for the aforementioned metastases there were none throughout the entire body. The final diagnosis was meningioma of the meningiothelial type.

Discussion

Dr. H. E. Michelson, Minneapolis: In many of these iconographic cases there is not much to state except that the condition is so unusual that it is literally a museum piece. However, there is one thing that should be emphasized: that most patients who allow tumors to attain an unusual size before seeking advice are of a peculiar mental make-up. This patient was a recluse. We have seen this often, especially in long cutaneous horns. Patients wait often until the horn is 6 to 8 inches long before anything is done.

It was a pleasure to see this patient and it speaks well for Dr. Laymon's versatility in his illuminating report.

Dr. W. H. Hengstler, Saint Paul: I have never seen a meningioma outside the skull. From a neurological standpoint they are hard to diagnose. Some diagnose them from calcium deposits found in x-rays of the skull. Apropos of what Dr. Michelson said about this patient delaying going to the doctor, I can only say that the man might have had a fear of doctors or thought that it might cost too much. I have known of people who did not go to doctors because they thought it would cost too much.

PROBLEMS IN THE X-RAY DIAGNOSIS OF PULMONARY TUBERCULOSIS

J. RICHARDS AURELIUS, M.D.

Saint Paul, Minnesota

Pulmonary tuberculosis, long the scourge of man, is fast losing ground to medical advancement, but its threat still remains very real. To further reduce this danger and eventually eliminate it, we believe it becomes necessary, more than ever, to appreciate its protean manifestations and endless variety of findings. Therefore, even in danger of being trite and emphasizing well known facts, we shall relate some of the pitfalls in the diagnosis of pulmonary tuberculosis as seen through the eyes of a radiologist.

Although the x-ray examination is of highest importance in the discovery and diagnosis of pulmonary tuberculosis, the fact still remains that an unequivocal diagnosis of pulmonary tuberculosis cannot be made from an x-ray film. The more we study the appearance of tuberculosis on the film, the more definitely we become convinced that any nontuberculous lesion that we have seen on an x-ray film of the chest at some time or another will have its counterpart in tuberculosis. It is because of this fact that a differential diagnosis can never be definitely made from a given film. In spite of this lack of a definitely diagnostic pathognomonic picture for pulmonary tuberculosis the x-ray still remains the one greatest aid in its diagnosis outside of the laboratory finding of the tubercle bacillus.

A well-taken history can be extremely helpful in reducing the differential diagnostic considerations on a chest film and is much more important than the physical examination. It is very common experience in chest radiography to find a strongly positive clinical history for tuberculosis when the x-ray film shows extensive infiltration in the lungs but with the physical examination of the chest completely negative. Occasionally the clinical history will be negative with definite findings of tuberculosis in the chest film, but these instances are rarely encountered.

E-21, M.M., F. (nurse), eighteen years old. Lesion picked up on routine chest films on leaving training school (graduation). Previous films always negative. Always good health. No complaints or symptoms. Surprised to hear of x-ray findings. Temperature, 99°. Sedimentation rate, 18 mm. in one hour. Physical examination showed no abnormal physical findings. Lesion proved to be tuberculosis. Films showed an irregularly outlined exudative infiltration in the middle third of the right lung and increased prominence of the right root, particularly suggestive of a pneumonitis which proved to be tuberculosis.

The failure of the physical examination of the chest to detect the presence of tuberculosis, even in advanced stages is not uncommon. Undoubtedly it has been the experience of all of us that a chest that gives no stethoscopic findings can still be very extensively infiltrated with tuberculosis. It is this failure of the physical examination that has lead to such joking statements as "I use the stethoscope merely to impress the patient rather than to rely on its detection of tuberculosis," or as I heard a Detroit thoracic surgeon tell an assembled group of physicians, in effect, that if they would only throw away their stethoscopes rather than to rely on them to rule out tuberculosis, he would not be doing so many thoracoplastic operations for advanced tuberculosis. This failure of the physical examination to elicit signs of tuberculosis is a shortcoming of the method and not necessarily of the physician, because we have all seen physicians of unquestioned ability fail at times to pick up any physical findings in the chest in the presence of disease in the chest. This experience is not unusual in a

radiological department of any size and it forcibly teaches the lesson that tuberculosis is never ruled out of the chest simply because the physical examination is negative.

A-85203, Mrs. B. C. N., fifty-four years old. Controlled diabetic, nine years, well until January, 1937, when she developed nonproductive cough, nervousness, night sweats, loss of weight. The diabetes became worse and she then was hospitalized. Routine chest x-ray film showed extensive bilateral tuberculosis. She was admitted to the Ancker Hospital pavilion. The chest was negative on physical examination. Film at this time (10-4-37) showed extensive tuberculosis in upper two-thirds of both lungs with cavitation.

A-22656, M.B., F, twenty years old. Always well. Kept company with a boy who died of tuberculosis in 1931. Finished high school under observation. Mantoux became positive in 1932, and suggestive findings were present on the chest film, but no findings though important until June, 1934, when the right upper lobe lesion definitely increased and patient was hospitalized. Had no cough or sputum and felt well. Sedimentation rate, 57 mm. in one hour. On admission to Ancker pavilion (6-29-34) there were no abnormal physical findings. The chest films showed a right apical infiltration extending to the second anterior rib level, with a cavity present.

A-123472, Mrs. R. J. D., twenty-four years old. Well until March, 1942, when she noticed a weight loss. Chill on 4-1-42, and then rapidly went down hill, losing 30 pounds of weight; many chills, drenching sweats, very weak, fever up to 105°. Sedimentation rate, 45 mm. in one hour. Died 6-15-42, of fulminating pulmonary tuberculosis. There were no abnormal physical findings in the chest examination. The film on 5-18-42, showed an extensive bilateral generalized nodular coalescing exudative tuberculous infiltration.

A-88559, Miss P. M. D., twenty-two years old, stenographer. Father a patient in Ancker Hospital pavilion. Patient had negative x-ray of chest in May, 1937. Developed a cold in November, 1937, which did not clear, and saw her physician, February 3, 1938. He found chest film and sputum positive for tuberculosis and had her admitted to Ancker Hospital. Admission film at Ancker Hospital showed extensive infiltration in the left lung root and a large cavity. At this time there were no abnormal physical findings in the chest. Improved with pneumothorax, but a check-up fluoroscopy for pneumothorax on 3-8-38 showed marked extension into the right lung, which was confirmed with chest film. The right lung showed no abnormal physical findings.

The cause of pulmonary hemorrhage can be as elusive as the cause of gastro-intestinal hemorrhage. Careful bronchoscopic and x-ray studies will frequently disclose no explanation for the hemoptysis. In these instances it is well not to dismiss the search at the time of the hemorrhage but to reëxamine the patient from time to time to catch what is often a delayed appearance of a lesion. This alertness will frequently be rewarded by the finding of an early tuberculosis.

A-5984, J. A. G., M, forty years old. Slight hemoptysis in January, 1935. Chest film then was negative and no cause was found for the bleeding. A chronic alcoholic, he was seen in the dispensary, from time to time, for a cough and given cough mixture. Had chills and fever, August 25, 1938, was admitted to Ancker Hospital and film of the chest showed advanced tuberculosis. The sputum was positive for tuberculosis. A chest film, (1-22-35) was negative. Chest film (8-27-38) showed extensive infiltration in the left lung and moderately in the right lung, with cavities in the left upper lobe.

A-18589, V. F. J., M., twenty-three years old. Frequent hemorrhages over a period of six years; coughed up one ounce of blood, 8-27-33. A chest film on 8-31-33, was negative. Infiltration appeared on film, 3-23-34. Course was benign and was quiescent, and dismissed on 12-1-34. Was well when last seen, 8-18-37. Chest film, 8-31-33, was negative except for small calcification in right apex. Chest film, 3-23-34, showed small area of infiltration in right upper lobe, suggesting tuberculosis.

A-30578, A. B., M, twenty-one years old. Well until September, 1932, when he had sudden hemoptysis. Chest x-ray suggested tuberculosis, but it could not be proved. Returned to work in eight months. In December, 1933, had pleuritic pain and hemoptysis and entered Ancker pavilion but again tuberculosis could not be proved. Mantoux was positive. Dismissed August, 1934, as probably not tuberculosis but returned in September of 1935 because of fatigue, weight loss and progression of lung infiltration. Sputum contained tubercle bacilli. Chest film, 2-7-34, showed considerable infiltration in the right upper and lower lobes and slightly in left upper lobe, suggestive of tuberculosis. Chest film, 9-19-35, showed extensive exudative infiltration in the right upper lobe with cavitation and moderate left apical infiltration, suggestive of tuberculosis.

In the directed or in the routine x-ray examination of the chest, pleural effusion on one side without any demonstrable lung infiltration occasionally is demonstrated. A casual attitude by some clinicians to this finding is not infrequently noted by the radiologist, only to find that the same patient who was allowed to return to normal activity in two or three weeks, returns in six months or a year with definite pulmonary tuberculosis. He not only was not treated sufficiently for his pleurisy, but also was not followed after this treatment to be sure that a parenchymal lesion had not appeared. It is this type of experience that teaches us to be extremely concerned about pleurisy and makes us feel that it should be treated as continuously as if a parenchymal lesion also were present at the same time. The failure to prove a tuberculous etiology for a unilateral pleural effusion does not permit the assumption that the tubercle bacillus is not the cause.

A-26335, R. K., F, seventeen years old. Admitted to Ancker Hospital, 12-1-33, with cough, fever, pain in the left chest. Chest film showed effusion in left pleural cavity. Mantoux test positive on 12-20-33. Discharged 2-7-34, and was to be watched in outpatient department. Returned 8-5-35, with nodes in right side of neck going on to suppuration. X-ray treatment was given and nodes became normal in size. Returned 9-14-36, because chest film showed tuberculosis, not present before. Guinea pig showed tubercle bacilli. Chest film, 12-16-33, showed extensive effusion in left pleural cavity. Chest film, 8-7-35, was negative. Chest film, 8-27-36, showed infiltration in left first interspace, suggestive of tuberculosis.

A-56008, M. C., M, fourteen years old. Had pleurisy with effusion, 10-28-38, being sick ten days before admission to hospital and remained for two weeks. Fluid

had left and Mantoux test was negative. Discharged to out-patient department, was followed one month and then dismissed by house doctor with advice to return if and when necessary. Stayed well up to November, 1939, when he complained of pain in right chest. Mantoux now was positive and chest film showed infiltration in the left lung. Tubercle bacilli recovered from guinea pig. Chest film, 11-3-38, showed effusion on the right, and slight left apical infiltration. Chest film, 11-2-39, showed extensive exudative infiltration in the left upper lobe, suggesting tuberculosis.

In the evaluation of chest films it is often a very great problem to differentiate a non-tuberculous bronchopneumonia from the infiltration of tuberculosis. Also a pneumonia that is resolving when first seen can have the identical appearance of tuberculosis. Tuberculosis not infrequently may be largely or entirely a basal lesion and will very closely simulate a patchy nontuberculous pneumonia. Cavitation in this type of lesion often is a clue to a tuberculous etiology. Innumerable experiences of this kind soon teach one that it is misleading to specifically and definitely name the etiology of a chest lesion from a film study. As has been stated before in this discussion, it is entirely possible for any lesion in the chest to simulate tuberculosis. Therefore, when reading a chest film, one is justified in simply suggesting the etiology as one of two or more possibilities in the differential diagnosis and indicating, when possible, the one that is most likely to be correct. Then, in consultation with the clinician, it may be possible to select the correct diagnosis. It is important that a clinician should not accept a suggested etiology as an unequivocal statement of fact or read that into it. The fallacy of making a dogmatic statement of etiology from a film study is easily illustrated.

5943 (Midway Hospital) Miss E. P. (nurse), twenty-three years old. Became ill with fever and cough. Recent exacerbation of chronic paranasal sinusitis. Mantoux test negative. Raised no sputum. Chest film showed infiltration suggesting tuberculosis. The lung lesion cleared with subsidence of the sinusitis. The chest film showed a right apical infiltration extending to the second rib level, suggesting tuberculosis and questionable cavitation.

26719 (Ancker Hospital) Mrs. R. E. A., thirty-seven years old. Delivered September, 1929. Asthma attack, November, 1929, and in hospital with fever but negative for tuberculosis. Readmitted, January 26, 1930, with productive cough, difficult breathing, weakness, loss of appetite. Worked for woman having tuberculosis (one year previously). Moderate coarse râles and wheezing entire chest, difficult expiration. Had no fever; sputum was negative for tuberculosis. Chest cleared promptly as a nontuberculous pneumonia. Chest film, 1-27-30, showed extensive patchy exudative infiltration in both upper lobes, possibly with cavitation and particularly suggestive of tuberculosis. A chest film, 2-7-30, showed this infiltration absent.

A-107573, O. L., M., fifty years old. A cook, quit work one year before. Collapsed on street and admitted to Ancker Hospital. A chest film, 1-29-40, showed extensive patchy infiltration in the right base and midportion of left lung, suggesting pneumonia except cavitation in right base makes tuberculosis likely. Lesion was due to tuberculosis.

A-39328, Mrs. W. M. C., thirty-seven years old. Cough through pregnancy. Delivered June, 1934. Nursed baby to 10-10-34. First x-ray of chest, 8-30-34, showed a left basal infiltration suggesting pneumonia. Mantoux became positive, 12-13-34. Sputum not positive until January, 1935. A second chest film, 12-7-34, showed left basal lesion still present with cavitation now seen.

A-10843, C. N., M, seventy-five years old. Admitted to Ancker Hospital, 5-8-33, with productive cough, two years; dyspnea, five years; occasional blood streaking. Chest film, 5-8-33, showed infiltration suggesting pneumonia right root and lower lobe. Sputum positive for tuberculosis, July, 1933. Lungs cleared almost completely. Died in 1944 from carcinoma of the prostate, and autopsy showed active tuberculosis in right lung.

26109 (Ancker Hospital). Mrs. M.S.G., seventy years old. Entered hospital, 12-4-29, with cough and weakness. Died, 12-6-29, from right heart failure. Autopsy showed extensive bronchiectasis and fibrosis in right lung, pus in left bronchi and right heart dilatation but no tuberculosis. Chest film, 12-5-29, showed extensive consolidating infiltration of entire right lung with cavities anr was suggestive of tuberculosis.

Those of us who have the privilege of seeing the chest films of tuberculous patients over a long period of time have noted that in some instances the evidence of tuberculosis remains unchanged while the cough continues to be productive and unending. The sputum and gastric specimens remain constantly negative for tubercle bacilli. Iodized oil injection in these patients will show, frequently, the presence of a nontuberculous bronchiectasis which is keeping up the cough after the tuberculosis has long since ceased to be active. This indicates that a cough in a tuberculosis patient does not necessarily mean activity and therefore activity should not be taken for granted.

A-20126, J. K., M., twenty-seven years old. Came to Ancker Hospital in 1930, with hemoptysis, and diagnosis of pulmonary tuberculosis was made but not confirmed. Left hospital in three weeks against advice. Later entered state sanatorium for tuberculosis. Had hemoptysis again in 1933 with bilateral tuberculosis including a clinical picture and positive sputum. Sputum became negative in 1933, and remained so, but cough continued. Iodized oil study showed bronchiectasis present. Chest film, 8-31-33, showed extensive tuberculosis in right upper lobe and minimal tuberculosis in left apex. Chest film, 6-11-35, showed hydropneumothorax on the right and negative right lung. Slight accentuation of basal lung markings on the left. Chest film, 7-20-35 (bronchography) showed extensive left basal bronchiectasis.

Frequently a radiologist is asked whether or not a given lesion of the lungs thought to be tuberculosis is active. It must be remembered that this type of evaluation cannot be made from a single film and often not from a series of films. If one has a series of consecutive films to evaluate and they extend over a reasonable period of time, it often is possible to say that a tuberculosis is active. The sharply defined, discrete, apparently unchanging lesion, however small it may be, still has the possibility of being active. It follows, therefore, that one cannot safely judge the activity status of

a lesion by what one sees on the film. That evaluation comes only by way of a thorough clinical study in which the x-ray examination is a very valuable aid.

A-9806, J. M., M, fifty-four years old. Original chest film showed a slight, evidently old, tuberculous fibrosis which was associated with a slight cough but otherwise apparently was inactive. Returned in two years with advanced tuberculosis and a positive sputum. Cough for four months. Chest film, 5-22-33, showed old fibrotic infiltration in both lungs and appears inactive. Chest film, 3-7-35, showed extensive tuberculosis in both upper lobes.

A-130469, Miss P. M., eighteen years old. December, 1942, had positive Mantoux in school and routine chest film showed slight right apical infiltration. Nodes in neck enlarged in July, 1943. Chest film showed no change in October, 1943. Pus from node was positive for tuberculosis. Sputum became positive in December, 1943. Chest film, 1-17-44, showed right apical lesion that appeared quiescent but is active tuberculosis.

Pulmonary tuberculosis in the aged is often a very atypical disease, showing unusual distribution of the chest lesions or fairly typical lung lesions but associated with a clinical picture that is not that of the ordinary type of tuberculosis. There may be a delayed positive Mantoux test or absence of the tubercle bacillus from the sputum or gastric washings in the presence of extensive pulmonary infiltrations. Case A-10843, described above, shows an atypical tuberculosis in a man seventy-five years old. The following cases also are variations in the old patients.

A-105114, Mrs. H. F., eighty years old. Entered hospital because of progressive weakness, epigastric pain and cough. Son died of tuberculosis one year before. Chest film, 10-6-39, showed a miliary infiltration in both lungs, including sharply defined and fuzzy lesions and a left pleural effusion and rather suggestive of metastatic malignancy. All laboratory tests for tuberculosis were negative. Died on 11-29-39, and autopsy showed generalized miliary tuberculosis. The lung tubercles were both of chronic (sharply demarkated) and acute types accounting for the appeanance on the film.

A-115445, M. G., M, aged eighty years old. Senile, emaciated, fell breaking humerus and admitted to Ancker Hospital, 2-5-41. Previous diagnosis of leukemia by own physician (ten months) but not confirmed in hospital. Sputum positive three days before he died on 3-28-41. Chest film, 2-11-41, showed patchy infiltration throughout right lung and less in left upper lobe, suggesting a pneumonia. Autopsy showed generalized tuberculosis, including bones and bilaterally in the lungs. No cavitation.

Summary

1. Notwithstanding the great importance of the x-ray examination in the diagnosis of pulmonary tuberculosis, it cannot be expected to make an absolute diagnosis.

2. Pulmonary tuberculosis should not be considered ruled out by a negative physical examination of the chest.

3. Hemoptysis is often followed by a late-appearing tuberculous infiltration.

4. Unilateral pleural effusion is often due to tuberculosis and is frequently followed by a late infiltration.

5. There is no strictly characteristic pattern for a tuberculous infiltration seen on the x-ray film.

6. A tuberculous infiltration should not be judged active or inactive from an x-ray film alone.

7. Pulmonary tuberculosis in the aged often is atypical and the diagnosis elusive.

Discussion

Dr. Thomas J. Kinsella, Minneapolis: I do not feel that Dr. Aurelius need make any excuses for this presentation. It contains a lot of meat and many points often overlooked in our interpretation of some x-ray films and reports. The roentgenologist is frequently on the spot because some physicians wish him to make the diagnosis of activity or inactivity of tuberculosis. If he does so and is wrong, some one is seriously harmed. If he happens to be right, his reputation may be enhanced by making a shrewd guess. Tuberculosis is where you find it—in old people, in young people, on the medical services, especially in diabetics, on the surgical floors, and on the obsterical and gynecological services. The more one searches, the more one finds.

One big mistake that is made in handling tuberculosis is in the patient with primary pleural effusion. If no other cause for the process can be found, the patient should be treated for an active, minimal tuberculosis by institutional care for several months; otherwise, many of these patients will break down with tuberculosis later on. Another big mistake that is now being made is in the indiscriminate use of streptomycin. The patient has an x-ray film made which is interpreted as showing tuberculosis. Without any further investigation or any other type of treatment, the patient is immediately placed on streptomycin therapy in the hope of obtaining a quick cure. This is not the miracle drug that the *Readers Digest* and other publications would have one believe. If it cannot be used intelligently, it should not be used at all.

A general rule that upper lobe x-ray lesions should be considered tuberculous unless proved otherwise, and lower lobe lesions considered non-tuberculous unless proven to the contrary, is a good one; but all such lesions must be studied thoroughly in order to reach an accurate diagnosis. One or two negative sputum specimens, particularly as examined in the average hospital laboratory, do not rule out tuberculosis. I have seen patients who have had forty to fifty negative sputum examinations and two or three negative cultures or guinea pig inoculations of sputum and yet had a lung which was riddled with tuberculosis. These patients are far more dangerous to our nurses than the cases which have already been diagnosed.

This has been an excellent presentation and I think it has been very timely.

Dr. D. Greth Gardiner, Saint Paul (by invitation): I have appreciated Dr. Aurelius' presentation tonight particularly in view of the fact that I think many men here do not realize that Dr. Aurelius was a clinician first before he was an x-ray specialist and has seen tuberculosis as a clinician. He can interpret what he sees on the x-ray plate. I think over a period of twenty years we have had our conferences at Ancker Hospital every Friday morning on tuberculosis, and Dr. Aurelius has brought out the cream of the problems that confront us. I agree with Dr. Kinsella that pleural effusions have to be considered tuberculous until proven otherwise. There are two men on our staff at the present time who had massive effusions that were treated as tuberculous but never proven. Nothing active ever showed in either lung. They were treated for about one and a half years for tuberculosis. Dr. Kinsella did not touch on that, but

(Continued on Page 1142)

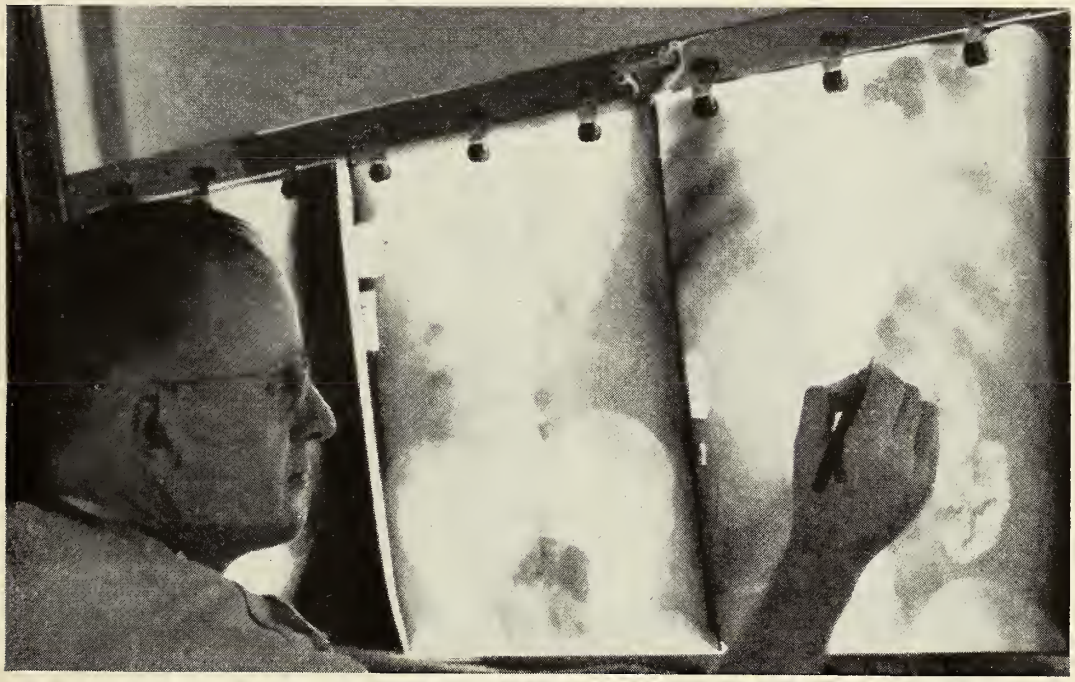
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RESEARCH IN THE SERVICE OF MEDICINE

In Memoriam

NORMAN SCHNEIDMAN

The Minneapolis Society of Internal Medicine in its first year as an organization sadly must record the first death of one of its members.

Norman Schneidman was born June 7, 1907, in the town of Meshbesh in the State of the Ukraine in Russia. He died in Minneapolis, September 6, 1949. Of his early life we know little. He emigrated to this country at the age of twelve. He was somewhat reticent about revealing the experiences of this early period of his life. He entered the first grade at the age of twelve and in a few years' time graduated from high school with the boys of his age. He entered the University of Minnesota as a premedical student in 1926. He received the degree of M.B. in 1934 and that of M.D., after interning at the Minneapolis General Hospital for one year, in 1935. His college and medical work as a student were always of the highest quality. This high quality was maintained in the face of desperate poverty at home. Norman had a lifelong ambition to be a physician. He achieved this ambition in the face of odds that would have felled a lesser man and prevented him from achieving his goal.

In 1933 he married Mildred Roberts. Dr. and Mrs. Schneidman had two daughters, Carole, born in 1941, and Barbara, born in 1944.

After receiving his M.D. degree, he practiced in several small communities in Minnesota, including Pipestone and Kasson. He then spent one year on the White Earth Indian Reservation as a federal physician. He returned to Minneapolis in 1937 and served for a year as city physician in the Minneapolis General Hospital. He then opened his office for the practice of medicine with Dr. Ziskin with whom he was associated from 1938 until 1941. He joined Dr. Moses Barron that year and entered the Navy in 1942. He served with distinction in the Southwest Pacific and was released from service in the summer of 1945. On his return to civilian life, he decided that he would specialize in the field of internal medicine. In his characteristic way he let nothing stand between him and his goal. Although he was older than most of his fellow residents, he took up a residency in the department of medicine in the Minneapolis Veterans Hospital. After serving twelve months and completing his requirements for the Board of Internal Medicine, he returned to private practice opening an office with Dr. Fingerman in the Physicians and Surgeons Building. He retained a service, however, at the Minneapolis Veterans Hospital, taking over a part of the chest work with Dr. Tucker.

In February, 1949, he found himself to be suffering from angina. A coronary thrombosis was discovered during that month and because of the severity of the lesion and a bad family history, he was advised to discontinue the private practice of medicine and to work part time or full time with the Veterans Administration. He continued to work at the Veterans Hospital following his recovery from the coronary thrombosis. At about the time that he was ready to return to full duty at the Veterans Hospital he suffered his second and final attack.

Dr. Schneidman was well known through his work at the University, at the Veterans Hospital, and through professional contact in downtown Minneapolis. His hospital affiliation in addition to the Veterans Hospital was the Asbury Hospital in Minneapolis. Dr. Schneidman had been unable to attend any of the meetings of the Minneapolis Society of Internal Medicine, since his illness predated the first meeting of this organization. Nevertheless, he was keenly interested in the organization and its members and he will be remembered during our lifetimes as a good friend, a keen practitioner of medicine, and a fine gentleman. His loss is our loss. We mourn his passing.

REUBEN BERMAN, M.D.

Plans for the new maternity hospital El Hogar de la Madre in Lima, Peru, call for a unit for the care of a mother's other children while she is in the hospital. This unit is to be called the Children's Hotel. Here it is planned to provide in bright and airy quarters a nursery, kindergarten and hotel under the supervision of pediatricians, nutritionists and child training specialists. This is the first such children's hotel planned in the Americas.—*Briefs,* October, 1949.

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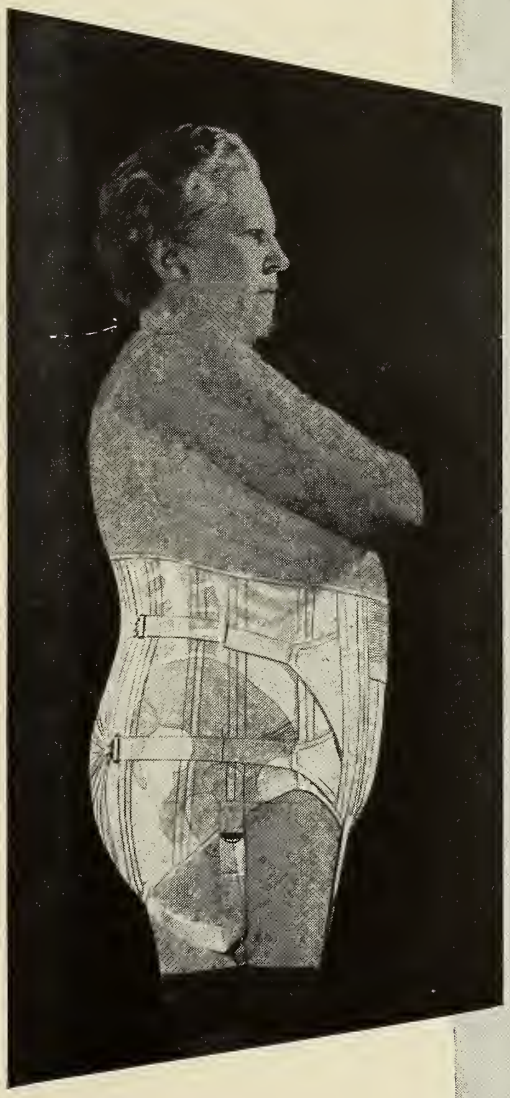
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✦ Reports and Announcements ✦

THE UNIVERSITY MEDICAL SCHOOL SEMINARS

The first of a series of state-wide seminars on heart disease, cancer, and psychosomatic medicine for professional groups has been successfully inaugurated at Bemidji.

On September 27 the first of eight consecutive weekly classes was held for the physicians of the Bemidji area at the Bemidji Lutheran Hospital. The faculty of the University of Minnesota School of Medicine, augmented by eminent practicing specialists, have provided lecturers for the physicians' meetings.

Sponsored by the Minnesota State Medical Association, the University of Minnesota School of Medicine, and the Minnesota Department of Health, the Bemidji Seminar has been received with great enthusiasm by the physicians of the locality, and it is believed that this will be duplicated at other seminars throughout the state.

Nurses of the Bemidji area have been utilizing the occasion of the physicians' seminar to hold eight meetings of their own the same evening and hour. The nurses' sessions are sponsored by the 11th District Nurses Association, the University of Minnesota School of Nursing, and the Minnesota Department of Health. Faculty members of the University of Minnesota School of Medicine and School of Nursing, provide speakers to address the group. Most of the nurses of the area are taking part in the meetings.

On October 18 dentists of the area joined the other professional seminars for a series of three sessions devoted to cancer and heart as they affect dentistry. The dental meetings are sponsored by the Minnesota State Dental Association, the University of Minnesota School of Dentistry, and the Minnesota Department of Health.

Minnesota's second seminar was held at Fergus Falls, starting October 26. Physicians and nurses held separate meetings during the course. Dentists have tentatively scheduled three sessions, the first to be held the same evening as the physicians' and nurses' meetings. Additional dental sessions will be added if sufficient interest is manifested.

During the 1949-50 season these professional seminars, designed to disseminate postgraduate education throughout the state, are planned for nine Minnesota areas. As presently organized, the 1949-50 schedule marks the beginning of a continuous five-year educational program for professional groups.

AMERICAN ACADEMY OF DERMATOLOGY AND SYPHILOLOGY

The eighth annual meeting of the American Academy of Dermatology and Syphilology will be held in Chicago, December 3 through 8. Special courses in histopathology and mycology will be presented at the medical schools of the University of Illinois and Northwestern University. Teaching clinics will be held at the University of Illinois College of Medicine in Chicago. Other sessions will be conducted at the Palmer House.

Dr. Earl D. Osborne, 71 North Street, Buffalo, New York, is secretary of the Academy.

COUNCIL ON INDUSTRIAL HEALTH

The Council on Industrial Health will hold its tenth annual Congress on Industrial Health at the Roosevelt Hotel in New York, New York, February 20 and 21, 1950.

NATIONAL CONFERENCE ON HEART DISEASE

A National Conference on Cardiovascular Diseases will be held in Washington, D. C., January 18-20, 1950, under the joint sponsorship of the American Heart Association and the National Heart Institute of the U. S. Public Health Service. This will be the first national conference bringing together physicians, scientists, community service leaders, and members of allied professions to formulate a comprehensive program to combat the nation's leading cause of death.

Dr. H. M. Marvin, president of the American Heart Association, and Dr. C. J. Van Slyke, director of the National Heart Institute, will be co-chairmen of the Conference.

The meeting will include representatitives in the fields of nursing, social work, hospital administration, rehabilitation, public health and others concerned with various aspects of the heart disease control program.

The American Heart Association was organized twenty-five years ago as a scientific body and was recently reorganized and expanded to become the only national voluntary health agency concerned exclusively with heart and circulatory disease. The National Heart Institute was created by Act of Congress in 1948 as one of the Public Health Service's National Institutes of Health at Bethesda, Maryland. The Institute, besides conducting its own program of research, supports also both fellowships and research in medical schools, hospitals, and laboratories with funds appropriated by Congress.

HENNEPIN COUNTY SOCIETY

At the annual meeting of the Hennepin County Medical Society in Minneapolis on October 3, Dr. Robert F. McGandy was installed as president, replacing Dr. Edward D. Anderson, who became chairman of the board of directors.

Other officers of the society include Dr. John H. Moe and Dr. Ernest R. Anderson, vice presidents; Dr. Charles A. Aling, secretary-treasurer, and Dr. Thomas Lowry, librarian.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

Dr. Warren E. Wilson, Northfield, was elected president of the Southern Minnesota Medical Association at its annual meeting in Red Wing on September 12.

(Continued on Page 1142)



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SOUTHERN MINNESOTA MEDICAL ASSOCIATION

(Continued from Page 1140)

He succeeds Dr. Lewis I. Younger, Winona, in the office.

Other officers elected at the meeting are Dr. R. F. Hedin, Red Wing, first vice president, and Dr. W. A. Merritt, Rochester, secretary-treasurer.

WABASHA COUNTY SOCIETY

The eighty-first annual meeting of the Wabasha County Medical Society was held at Plainview on October 6.

Officers elected at the meeting include Dr. L. M. Ekstrand, Wabasha, president; Dr. William P. Gjerde, Lake City, vice president; Dr. W. F. Wilson, Lake City, secretary-treasurer, and Dr. B. A. Flesche, Lake City, assistant to the secretary.

During a scientific session held in the evening, papers were presented by Dr. E. C. Bayley, Lake City; Dr. T. T. Myers, Rochester; Dr. B. A. Flesche, Lake City, and Dr. R. A. Green, Minneapolis.

WASHINGTON COUNTY SOCIETY

Members of the Washington County Medical Society did not hold their regular monthly meeting in October, but instead they accepted an invitation from Dr. Karl H. Pfuetze, superintendent of the Mineral Springs Sanatorium in Cannon Falls, to attend a dinner on October 13. The other seven counties which send patients to the Mineral Springs Sanatorium were also represented by members of their county medical societies. About 100 physicians attended the dinner and afterwards heard illustrated talks by specialists in tuberculosis.

MINNESOTA ACADEMY OF MEDICINE

(Continued from Page 1136)

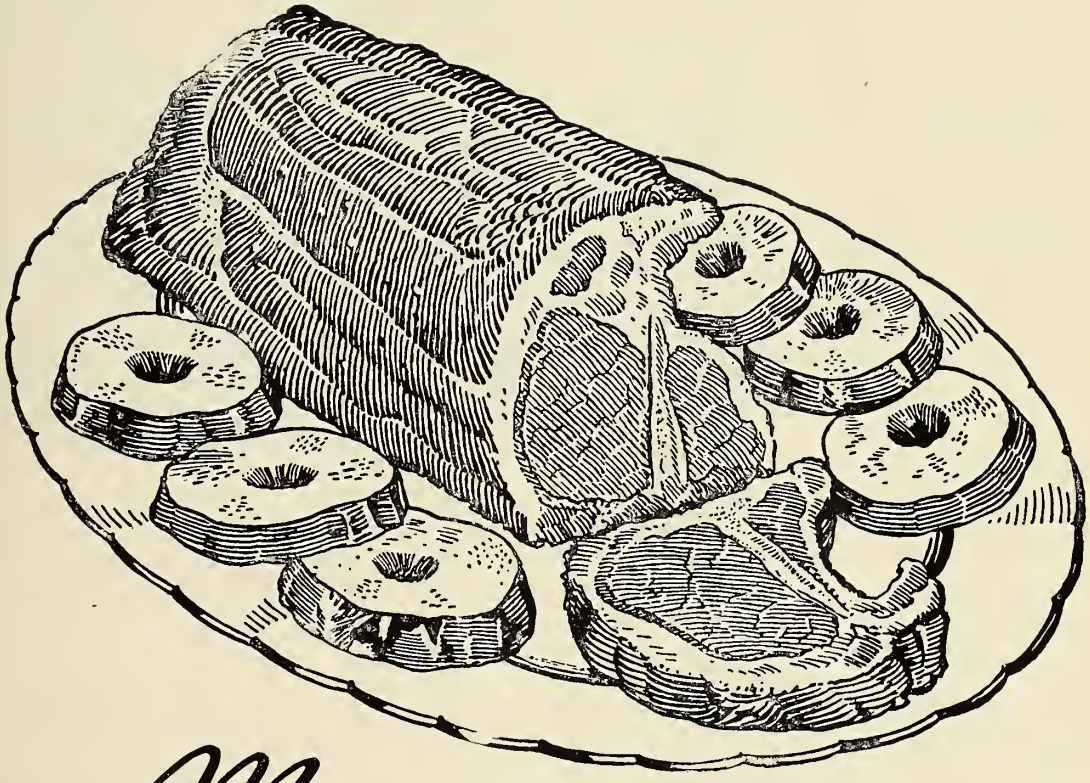
I am sure in my thoracoplasty work at Ancker Hospital I have refused to operate on the patient with positive gastric washes.

Dr. H. L. Ulrich, Minneapolis: I am a little astonished that the clinicians did not find evidence of parenchymal inflammation in some of these cases presented tonight. We who studied medicine without the aid of the x-ray had to do it. Parenchymal lesions in the lungs can usually be picked up by looking at the neck. Pottenger called attention to the neurotrophic reflexes occurring in the neck when there was parenchymal inflammation present. In the acute stage, there is increased muscle tonus on the side of the lesion; later on, chronic atrophy of the muscles previously stimulated occurs. We also used the malar flush on the side of the lesion as significant. My discussion is not intended to be derogative of x-ray chest examinations, but I think the clinical inspection of the patient's neck will always tell us of pulmonary lesions. I think our dependence on x-ray has made us minimize or lose some of our skill in seeing and feeling.

The meeting was adjourned.

A. E. Cardle, M.D., *Secretary*





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*McLester, J. S.: Protein Comes Into Its Own, J.A.M.A. *139*:897 (Apr. 2,) 1949

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Woman's Auxiliary

AUXILIARY MAKES NEW APPOINTMENT

Mrs. George L. Merkert of Minneapolis was named chairman of the Emergency Nursing Committee of the Woman's Auxiliary to the Minnesota State Medical Association at the annual fall board meeting of the organization September 23, at the Hotel Radisson.

Mrs. H. E. Bakkila, president of the State Auxiliary, announced the appointment.

Mrs. Bakkila also presented Mrs. Harold Wahlquist to the group. Mrs. Wahlquist, last year's state auxiliary president, is the new first vice president of the national auxiliary, elected at Atlantic City, New Jersey, last June.

The convention which gave Mrs. Wahlquist this important post was reported in detail by Mrs. Bakkila, Minnesota's delegate.

The Auxiliary Board went on record as again endorsing the cancer essay and poster contests throughout the state, giving to these projects the sum allocated in the Auxiliary's budget for that purpose.

In line with the Auxiliary's public health education work, county presidents were urged to keep alerted to state medical legislation which may be in the formative stage now for introduction when the legislature meets again in 1951. Preparations were begun for the next state-wide public relations conference—the annual Workshop. If the board's tentative plan is followed, all Auxiliary chairmen will receive questionnaires concerning the time, place, program content and general procedure for next year's session.

The Board elected the following women to membership on the Nominating Committee: Mrs. Peter Rudie, chairman; Mrs. Melvin Henderson, Mrs. William Von der Weyer, Mrs. Virgil Schwartz, Mrs. Walter Benjamin. Mrs. M. I. Hauge and Mrs. G. M. Erskine were named alternates.

* * *

"AUXILIARY NOT EXCUSE": EDITOR

"I know that the Auxiliary of the Minnesota State Medical Association is more than just a name; more than an excuse for women to get together at a bridge luncheon, a dinner dance, or a picnic with your husbands," declared Max Ninman, editor of the Reedsburg (Wisconsin) *Times-Press,* when he addressed the second annual Woman's Auxiliary Workshop September 22, at the Hotel Radisson.

Mr. Ninman, past president of the Wisconsin Press Association, discussed "Community Responsibilities of the Doctor and His Wife," following the banquet which

(Continued on Page 1146)

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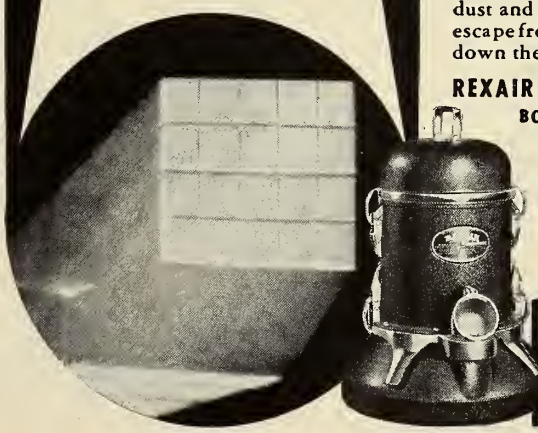
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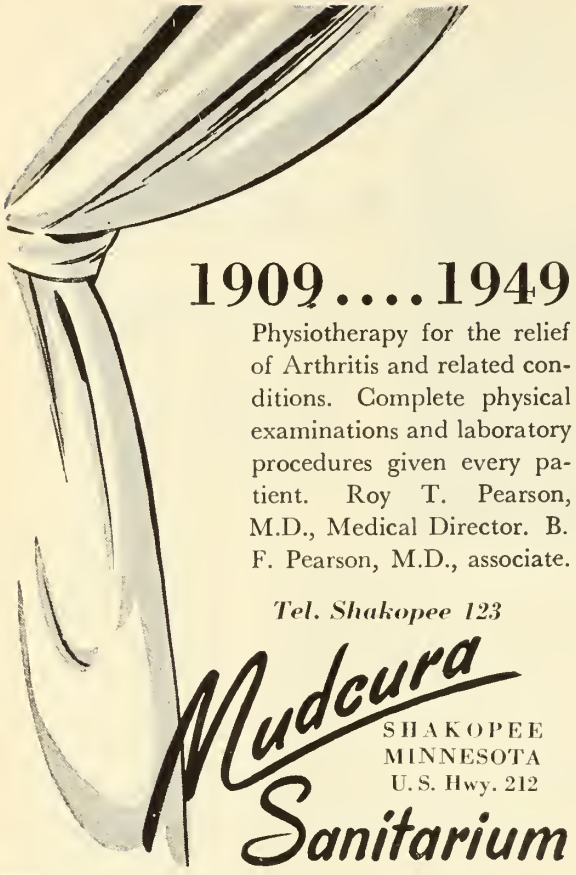
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AUXILIARY NOT EXCUSE

(Continued from Page 1144)

concluded the all-day conference on public relations and health education.

"Organizations must have a purpose rightfully to exist —to live, yes to be worthy of membership," Mr. Ninman continued. "Your organization must be an active one with constructive goals—this second annual Workshop proves the point. You are here because you are deeply interested in the professions of your husbands, and to gain such information as might aid you in their relationship with the people of your communities."

Keynoting his discussion with "the more personal, intimate and neighborly aspects," Mr. Ninman advised Auxiliary members to encourage their husbands to find interests—"community problems from the civic and governmental level."

"Take Active Part"

Doctors' wives, too, should interest themselves in community affairs, Mr. Ninman believes. "You should, if you are not now doing so, take an active part in community affairs, and not necessarily in relation to health activities."

Mr. Ninman closed his address with the maxim: "Do good to your community, and your community will do good to you."

The Workshop began at 9 a.m. with registration. Mrs. H. E. Bakkila, Auxiliary president, opened the discussion sessions with a welcome to those present. Said Mrs. Bakkila: "This second annual Workshop, sponsored by the Minnesota State Medical Association, is for the purpose of teaching us, as wives of physicians, how we can become more effective leaders in health in our state and better interpret health and health problems to our neighbors."

K. A. Kirkpatrick, of the Minnesota Farm Bureau, discussed the general threat of socialism in the United States in an address titled "Socialism, USA," and added comments on the rural health problems of this state.

Health Departments Good

"Setting up of county health departments, made possible by an enabling act passed by the 1949 state legislature, is a great step forward in the rural health program," he said.

Following Mr. Kirkpatrick, Dr. A. E. Cardle, chairman of the MSMA Public Health Education Committee, discussed "Minnesota's Public Health Education Program."

"In Minnesota we have finished with polite, academic discussions of compulsory health insurance," Dr. Cardle told the Auxiliary. "As members of a free and responsible profession we have definitely assumed the offensive."

State Against CHI

Calling attention to the progress made under this new policy, Dr. Cardle cited *Minnesota Poll* figures which indicate that Minnesotans in increasing numbers have "turned from this program (compulsory health insurance) to a renewed faith in their family doctors." Poll statistics show that 55 per cent of Minnesota's adult

(Continued on Page 1156)

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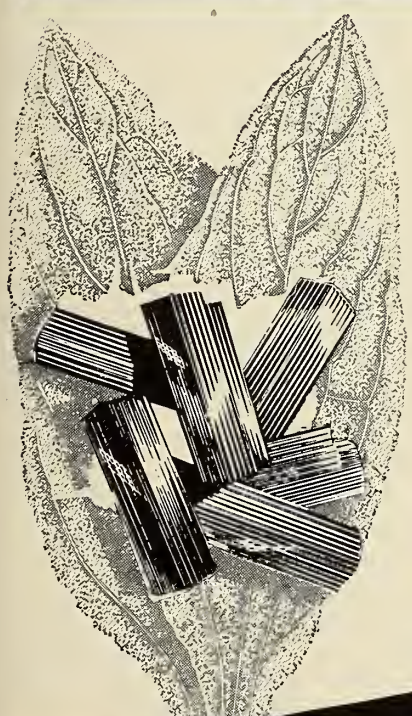
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Of General Interest

Fifty-four years in office—fifty-three of them as secretary-treasurer and one as president of the Wabasha County Medical Society—is the record held by Dr. W. F. Wilson of Lake City. In 1896, Dr. Wilson was elected secretary-treasurer of the society for the first time. Since then, he has been re-elected to the post each year, with the exception of one year when he served as president. He began his fifty-fourth term as an officer on October 6, when he was re-elected secretary-treasurer at a meeting of the Wabasha County Medical Society in Plainview.

* * *

At a meeting of the Multiple Sclerosis Society in Duluth on September 13, Dr. Martin O. Wallace presented a talk on "Socialized Medicine." The meeting was open to the public.

* * *

Dr. Harry M. St. Cyr opened offices for the practice of medicine at 2203 West Broadway, Minneapolis, early in October. A graduate of the University of Minnesota Medical School, Dr. St. Cyr spent two years in the Army, serving most of the time in Munich, Germany. He recently completed some postgraduate training at Swedish Hospital, Minneapolis.

* * *

It was announced on September 15 that Dr. A. C. Martin, formerly of Harvey, Illinois, would begin practicing medicine in Luverne as soon as office space became available. A graduate of the University of Illinois Medical School, Dr. Martin served in the Navy for ten months before starting his practice in Harvey, Illinois.

* * *

Dr. Paul L. Wermer has joined the staff of the AMA Council on Pharmacy and Chemistry as an assistant to Secretary Austin Smith. Dr. Wermer received a degree in pharmacy from Fordham University School of Pharmacy, took his premedical training at New York University and received his medical degree from the University of Michigan. He has had considerable experience, including a two-year rotating internship, with nine months of specialization in obstetrics and gynecology, postgraduate work in gynecologic pathology and endocrinology, five years of medical practice with special attention to obstetrics and gynecology, five years of service during the war and three years with two pharmaceutical houses.

* * *

Among Minnesota physicians attending a two-week course in psychosomatic medicine for general practitioners at the University of Minnesota Center for Continuation Study during the middle of September was Dr. Paul J. Person of the Medical Arts Clinic, Albert Lea.

* * *

At the annual meeting of the Minnesota Society of Internal Medicine in Saint Paul on October 17, Dr. F. H. K. Schaaf of Minneapolis was elected president of the organization. Dr. Alex E. Brown, Rochester, was elected vice president, and Dr. Robert L. Parker, Rochester, was named secretary-treasurer. The spring meeting will be held in Duluth.

* * *

Dr. Donald M. Houston and Dr. George V. Kleifgen, both of Park Rapids, have dissolved their association in the practice of medicine, it was announced on September 15.

* * *

A free tuberculosis clinic was conducted in South Saint Paul on September 26 by Dr. Karl H. Pfuetze, superintendent of the Mineral Springs Sanatorium, Cannon Falls.

* * *

Cancer co-ordinators from all of the nation's medical schools assembled at the University of Minnesota on October 21 and 22 for their second annual conference.

Dr. Arnold J. Kremen, co-ordinator for the University of Minnesota Medical School, explained that the National Cancer Institute of the United States Public Health Service allocates $25,000 annually to each of the country's seventy-five medical schools, to be used in improving cancer teaching and clinical cancer research. In each of these medical schools, a cancer co-ordinator has been appointed to expedite the improvement of teaching and clinical research in the field of cancer.

* * *

During the middle of September, Dr. J. C. Murphy, formerly of Seattle, Washington, became associated in practice with Dr. Glenn E. Nelson in Fairfax. A graduate of the New York Medical College, Dr. Murphy has been affiliated with the Firland Sanitarium in Seattle for the past several years.

* * *

It was announced on September 15 that Dr. Leonard J. Prochaska of Baudette had purchased the practice of Dr. Richard W. Maertz in Goodhue and would begin practicing medicine there on October 15.

* * *

Principal speaker at a meeting of the Saint Paul Surgical Society in Saint Paul on September 28 was Sir James Learmonth, special surgeon to King George VI of Great Britain. Sir James received much of his medical training at Rochester.

* * *

Mrs. Ida Tunstead, the wife of Dr. Hugh J. Tunstead of Minneapolis, died on September 29 at the age of seventy-three. She was a past president of the Woman's Auxiliary to the Hennepin County Medical Society.

* * *

A continuation course in diseases of the chest was held at the University of Minnesota Center for Continuation Study October 20 through 22. The course, which was sponsored by the Minnesota Chapter of the American College of Chest Physicians, was directed at general practitioners.

* * *

Dr. Carleton S. Strathern, St. Peter, has been named president of the Nicollet County Health Association. His

(Continued on Page 1150)

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(Continued from Page 1148)

father, Dr. F. P. Strathern, who headed the county association for twenty-five years, resigned as president last December.

* * *

A $40,000 program to increase medical service in Minneapolis was launched by the Hennepin County Medical Society on September 13. The program includes (1) the installation of a twenty-four hour, two-position switchboard at the society's headquarters in the Medical Arts Building to help persons contact a physician immediately; (2) the establishment of a bureau of medical economics to aid in providing medical care to persons who deprive themselves of it for fear of incurring indebtedness; (3) expansion of the society's medical library to almost double its present size; (4) complete remodeling of the executive offices. Since the expanded facilities will absorb the auditorium space in the Medical Arts Building, future society membership meetings will be held in the auditorium of the North American Life and Casualty Company.

* * *

Dr. A. J. Chesley, executive secretary of the Minnesota Department of Health, spoke at a regional meeting of the Minnesota League of Municipalities in Walker on September 20.

* * *

At the fall meeting of the Tuberculosis and Health Association of St. Louis County, held at Chisholm on October 4, the principal speaker was Dr. E. L. Ross, Winnipeg, medical director of the Sanatorium Board of Manitoba. Dr. Ross spoke on "Changing Emphasis in Tuberculosis Control in Manitoba."

* * *

Dr. Philip S. Hench and Dr. Edward C. Kendall, Mayo Clinic staff members who pioneered in the use of cortisone, received a 1949 Lasker award for administrative and scientific achievement—a $1,000 prize and a figure of "Winged Victory." The award was presented at the annual meeting of the American Public Health Association, in New York on October 25.

* * *

After teaching at the University of Minnesota since 1944, Dr. James F. Bosma left Minneapolis on September 19 to become head of the pediatrics department at the University of Utah Medical School, Salt Lake City. A graduate of the University of Michigan Medical School in 1941, Dr. Bosma came to Minnesota from a post at Western Reserve University in Cleveland.

* * *

Dr. E. W. Arnold of Adrian spoke on a radio program entitled "Your Health Hour" which was broadcast over a local radio station on September 18. He discussed the county-wide immunization program.

* * *

Dr. P. M. Mattill, assistant superintendent of the Glen Lake Sanatorium, will be in charge pending the choice of a successor to Dr. E. S. Mariette, it was announced on September 9. On the same day the sanatorium commission voted to start a nation-wide search for a successor to Dr. Mariette, whose resignation as superintendent was to become effective on November 1.

A former resident of Kasson, Dr. Donald L. Augustine has been named professor of tropical medicine at Harvard University Medical School. Dr. Augustine has been a member of the Harvard faculty since 1924.

* * *

A banquet to honor Dr. John B. Clement for fifty years of service was held in Lester Prairie on October 5. Planned by members of the Civic and Commerce Association and served by the American Legion Auxiliary, the banquet gave residents of the community an opportunity to pay tribute to Dr. Clement, who has practiced uninterruptedly in Lester Prairie since October 5, 1899.

* * *

At a symposium on brucellosis, held at Bethesda, Maryland, September 22 and 23, Dr. Wesley W. Spink, professor of medicine at the University of Minnesota Medical School, spoke on "Clinical Aspects of Brucellosis in Man." Dr. A. I. Braude, fellow in medicine at the University of Minnesota, spoke on "The Pathology and Pathogenesis of Brucellosis."

* * *

After practicing for one year at Hay Springs, Nebraska, Dr. L. S. Winter left to begin a residency in surgery at the Minneapolis Veterans Hospital on October 1.

* * *

Dr. R. Norman Sather, formerly of Mora, has become associated in practice with his brothers, Dr. George Sather and Dr. Edgar Sather, in Fosston. A graduate of Rush Medical College in Chicago in 1937, Dr. R. Norman Sather interned at Ancker Hospital, Saint Paul, then practiced in McIntosh for two years. He served in the Army from 1942 until 1946. During the past three years he was associated with Dr. P. C. Peterson in Mora.

* * *

One of the speakers at a meeting of public health nurses of District 5, Minnesota Department of Health, held at Worthington on September 21, was Dr. Roger P. Hallin of Worthington.

* * *

"Our Mental Health Problem," was the subject discussed by Governor Luther Youngdahl at a joint meeting of the American Academy of General Practice and the Ramsey County Medical Society in Saint Paul on September 26. Governor Youngdahl also spoke about problems in human resources at the state level of government.

* * *

A grant of $552,000 to the University of Minnesota for the study of cardiovascular diseases was announced on September 12. The grant is to be administered by the United States Public Health Service's National Health Institute.

Of the total grant, $485,000 will be used to add a fourth story for research to the Variety Club Heart Hospital and to provide increased research facilities in the proposed Mayo Memorial Medical Center. Amounts totaling $53,516 will go to seven University research men: Dr. Jerome T. Syverton, head of bacteriology; Dr. William G. Kubicek, Dr. Frederic J. Kottke, Dr. Richard L. Varco, Dr. Arthur Kirschbaum, Dr. E. T.



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Esophogeal Surgery, one week, starting April 17.
Breast and Thyroid Surgery, one week, starting June 19.
Thoracic Surgery, one week, starting June 12.
Fracturcs and Traumatic Surgery, two weeks, starting April 17.
GYNECOLOGY—Intensive Course, two weeks, starting February 20.
Vaginal Approach to Pelvic Surgery, one week, starting November 7, March 6.
OBSTETRICS—Intensive Course, two weeks, starting November 7, March 6.
PEDIATRICS—Intensive Course, two weeks, starting April 3.
MEDICINE—Intensive General Course, two weeks, starting April 3.
Gastroscopy, two weeks, starting March 6.
DERMATOLOGY—Formal Course, two weeks, starting May 1. Informal Clinical Course every two weeks.
ROENTGENOLOGY—Diagnostic and Lecture Course first Monday of every month.
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* * *

A speech pointing out the numerous sad results that could be expected under a system of socialized medicine was delivered by Dr. Edwin J. Simons of Swanville at a meeting of the Brainerd Rotary Club on September 27.

* * *

Among those in attendance at the second annual Symposium on Orthopedic Appliances at the Mellon Institute in Pittsburgh, held during the week of September 19, was Dr. William H. Bickel, Rochester.

* * *

Members of the Lions Club in Stillwater, on September 13, heard a talk by Dr. Edwin J. Rose, general manager of the Minneapolis Veterans Hospital, who described the facilities and operations of the 1,052-bed institution.

* * *

Mrs. Viola Williams, the wife of Dr. M. R. Williams of Cannon Falls, died on September 11 at the age of forty-three. She had been ill for several weeks before her death.

* * *

A series of rural health clinics was recently completed in Goodhue County, offering rural residents the benefits of smallpox vaccination, immunization against diphtheria, and Mantoux tests. The series was the fourth since 1941 and was under the direction of Leola Ellis, county nurse. Co-operating in the presentation of the clinics were the county medical society, the county public health association, the Farm Bureau, rural schools, the medical society auxiliary, and the county extension service.

* * *

The association in practice of Dr. H. W. Hermann and Dr. J. J. Ahlfs of the Caledonia Clinic was announced late in September. Dr. Hermann has been practicing with Dr. Ahlfs in Caledonia for the past two years.

* * *

Thirty physicians from Bemidji and the surrounding area attended, on September 27, the first session of an eight-week medical seminar being held in Bemidji. At the first meeting Dr. George N. Aagaard, director of postgraduate education, University of Minnesota Medical School, discussed hypertension; and Dr. R. L. Varco, associate professor of surgery at the University, spoke on cancer of the lungs. The seminar is sponsored by the University of Minnesota Medical School and the Minnesota State Medical Association.

* * *

At a meeting of mental health experts in Milwaukee on September 22 and 23, one of the principal speakers was Dr. Maurice N. Walsh of Rochester. The meeting was sponsored by the Wisconsin Society for Mental Health, with the assistance of the state mental health authority and the department of neuropsychiatry of the medical schools of Marquette University and the University of Wisconsin.

* * *

Four physicians from Duluth and vicinity participated in the Mississippi Valley Conference on Tuberculosis combined with a session of the Mississippi Valley Trudeau Society at St. Louis, Missouri, during the week of September 19. The four physicians were Dr. Reno W. Backus, associate medical director and director of mobile

surveys, Nopeming Sanatorium; Dr. G. A. Hedberg, Nopeming Sanatorium superintendent and medical director; Dr. Mario Fischer, Duluth city health director, and Dr. B. J. Terrell, Nopeming Sanatorium staff physician.

* * *

Dr. Rudolph J. Wilkowske, Owatonna, was one of the Minnesota physicians attending a one-day meeting of the Northwestern Pediatric Society at Bayport on September 30.

* * *

Keynote speaker on the mental health day program presented in Albert Lea on September 23 was Dr. Reynold A. Jensen, consulting psychiatrist for the State Department of Health, who told the audience that national progress along mental health lines has not kept abreast the progress in physical health. Dr. Jensen pointed out that the need for mental health programs in the country is clearly indicated by the fact that 600,000 hospital beds are occupied by persons with mental illness—more beds than are occupied by persons suffering from all other medical conditions combined. The mental health day program was sponsored by the Freeborn County Public Health Nursing Auxiliary.

* * *

"Nutrition in General Health" was the title of a talk presented by Dr. Russell M. Wilder, Rochester, at a conference on dental health education on September 29 at the University of Minnesota.

* * *

The establishment of the James Hoffman Bentson Fund to provide a memorial for the late Dr. James H. Bentson at Mount Sinai Hospital, Minneapolis, was announced on September 26. Dr. Bentson, a fellow at the Mayo Clinic, died on June 28 in New York. His parents, Mr. and Mrs. Mort Bentson of Saint Paul, made an initial contribution of $5,000 to the fund.

* * *

Construction work on a new building, to house the Pine River Clinic, began in Pine River in late September. The structure, which is being erected by Dr. Charles M. Zeigler and Dr. A. T. Rozycki, will contain a waiting room, emergency room, offices, and treatment and convalescent rooms. Dr. Zeigler and Dr. Rozycki hoped that the new clinic would be ready for occupancy by late December.

* * *

It was announced on September 22 that Dr. Martin Munson would begin practice in Barnum as soon as he could find suitable housing and a location for his office. A graduate of the University of Minnesota Medical School in 1946, Dr. Munson served his internship at St. Luke's Hospital, Duluth. He then served in the Army for two years.

* * *

As principal speaker at a meeting of the Kiwanis Club in Rochester on September 22, Dr. Frank H. Krusen, head of the section on physical medicine at the Mayo Clinic, discussed socialized medicine.

* * *

A three-day seminar on infantile paralysis, sponsored by the Sister Elizabeth Kenny Foundation, was held in Minneapolis on October 3, 4 and 5. At the opening session Sister Kenny explained her concept of infantile paralysis. Dr. C. W. Jungeblut, professor of bacteriology



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Dr. Andrew J. Leemhuis.

at Columbia University College of Physicians and Surgeons, discussed "Newer Knowledge on the Pathogenesis of Poliomyelitis." Among the other speakers at the seminar were Dr. Miland E. Knapp, director of physical medicine in charge of treatment at the Kenny Institute; Dr. Harold S. Diehl, dean of the University of Minnesota Medical School; Dr. Gaylord Anderson, director of the School of Public Health, University of Minnesota; Dr. Frederic J. Kottke, associate professor of physical medicine at the University, and Dr. Lewis Sher, Minneapolis pediatrician. Treatment demonstrations were conducted at the Kenny Institute by Dr. Knapp.

* * *

Dr. L. H. Flancher, Des Moines, Iowa, former director of Sand Beach Sanatorium at Lake Park, from 1925 to 1941, will again become director of the institution, it was announced on September 22. Dr. Flancher succeeds Dr. R. R. Hendrickson, who resigned recently to become superintendent of Sunnyrest Sanatorium at Crookston. Since leaving the Sand Beach Sanatorium post in 1941, Dr. Flancher has been head of the tuberculosis department of the Iowa State Department of Health.

* * *

One of the speakers at a meeting of the executive committee members and committee chairmen of the Nobles County Health Council in Worthington on September 15 was Dr. B. O. Mork, Jr., acting director of Public Health District 5, who reviewed the growth and development of the council.

* * *

Two Minnesota physicians were honored at a meeting of the Minnesota Public Health Workers' Association in Minneapolis on September 30. The group conferred honorary memberships on Dr. Walter J. Marcley, tuberculosis consultant for the state health department, who opened the first state tuberculosis sanatorium in the United States in 1897 at Rutland, Massachusetts; and Dr. Ernest S. Mariette, who recently retired because of ill health after thirty-three years of service as superintendent and medical director of Glen Lake Sanatorium.

HOSPITAL NEWS

It was announced in Crookston on September 16 that Dr. M. O. Oppegaard had been elected chairman of the Bethesda Hospital Campaign for funds to construct a new wing on the hospital. Mrs. C. L. Oppegaard, the wife of Dr. C. L. Oppegaard, and Mrs. C. M. Larson were named co-chairmen of the Crookston women's division of the fund drive.

* * *

At the annual staff meeting of Northwestern Hospital, Minneapolis, on September 19, Dr. Erling W. Hansen was elected president to succeed Dr. R. S. Ylvisaker. Dr. Claude J. Ehrenberg was elected vice president, and Dr. Albert T. Hays was re-elected secretary-treasurer.

* * *

The Cass Lake General Hospital, owned and operated by Dr. C. H. Coombs, closed its doors on September 15. Stating that the hospital has been operated for ten years without a profit, Dr. Coombs said that a point had been reached where the hospital could not be kept open without community assistance. Following his statement, a citizens committee met in Cass Lake and suggested that the village council appoint a group to investigate the problems of the hospital and plan a way for its reopening.

* * *

Dr. Charles Donaldson, Foley, was elected chief-of-staff of the Community Hospital at Princeton at a meeting held on September 19. Dr. Elton Clothier, Elk River, was re-elected vice chairman, and Dr. William McManus, Princeton, was re-elected secretary.

BLUE CROSS-BLUE SHIELD NEWS

Sixty-eight Minnesota doctors joined the Blue Shield Plan during September. There are 2,536 Minnesota doctors now participating in the plan.

In all, 600 nonparticipating doctors were contacted by mail during September about enrolling with Blue Shield.

All doctors are requested to submit their reports of services rendered to Blue Shield subscribers as promptly as possible. This will enable the Blue Shield office to make prompt payment and eliminate the confusion and misunderstanding caused by delay.

The past few months have shown that Blue Shield has a plan that is operating smoothly and is benefitting both the patient and the doctor. Letters and calls have been coming in increasing numbers from subscribers and doctors' offices throughout the state, expressing gratitude and appreciation for the Blue Shield contract and Blue Shield services.

In view of earlier comment in this column, which called attention to the dissatisfaction apparent among a

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small minority of the medical profession, these letters have been especially gratifying. The Blue Shield office is keenly aware of the doctors' support and wishes to take this opportunity to express its sincere appreciation.

Minnesota Blue Shield now covers 223,670 participant subscribers, and benefits to subscribers for the first eight months of this year total $676,694.

Minnesota Blue Cross now covers 956,918 participant subscribers, and benefits to subscribers for the first eight months of this year total $5,531,984.

In addition to the regular hospitalization experience during August, Minnesota Blue Cross processed 195 cases providing 1,204 days of hospital care to subscribers of other Blue Cross Plans who were hospitalized in Minnesota Blue Cross hospitals under the reciprocity program. On the other hand, 131 Minnesota Blue Cross subscribers received 836 days of hospital care in other Blue Cross hospitals under the reciprocity program.

This reciprocity arrangement, inaugurated May 1, this year, provides subscribers with much greater coverage than was formerly possible under the emergency care benefits provided in the Blue Cross contract. Under the reciprocity program, Minnesota subscribers who go to any co-operating Blue Cross hospital outside this state receive the contract benefits of the Blue Cross Plan in whose area they are hospitalized. Fifty-eight Blue Cross Plans are now participating in the reciprocity program, with over 3,400 member hospitals.

According to the Blue Cross Commission, hospital care for members of the nonprofit Blue Cross Plans amounted to $161,572,811 during the first six months of 1949. This represents 87.64 per cent of the total income of the 90 Blue Cross Plans—the largest percentage of income paid for members' care during any previous six-month period.

The Blue Cross Commission also announced the approval of the Illinois State Department to inaugurate Blue Cross Health Service, Inc., for the purpose of assisting Blue Cross Plans in enrolling national organizations having branch offices in various states. Minnesota Blue Cross has committed itself to this national enrollment agency.

The Blue Shield Commission is proposing a national enrollment agency similar to the Blue Cross Health Service, Inc.; however, the Board of Directors of Minnesota Medical Service, Inc., is not committing itself to this program until further study.

There's been a change in Minnesotans' thinking about compulsory health insurance. So claims the Minnesota Poll. February 20, 1949, the Minnesota Poll results were headlined in *The Minneapolis Tribune:* "National Health Insurance Proposal Appeals to Many Adults in State." The opening paragraph of the summary stated: "President Truman's proposal for government tax-supported national health insurance is favored by a majority of Minnesota residents, *The Minneapolis Tribune's* Minnesota Poll finds in a statewide survey. Almost two in every three adults in addition feel that such a program is needed." By June 19, the poll takers found that 48 per cent of the state's adults preferred private health plans, as against 28 per cent who were still in favor of a government setup. The last poll taken—August 10—revealed 53 per cent of the people in this state were definitely against a government program for health care.



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MAY'S MANUAL OF THE DISEASES OF THE EYE. 20th Edition. Revised and edited by Charles A. Perera, M.D. Assistant Clinical Professor, College of Physicians and Surgeons, Columbia University, New York; Associate Attending Ophthalmologist, Presbyterian Hospital, New York. 512 pages. Illus. Price $5.00, cloth. Baltimore: Williams & Wilkins Company, 1949.

HEARING TESTS AND HEARING INSTRUMENTS. Leland A. Watson and Thomas Tolan, M.D. 597 pages. Illus. Price $7.00, cloth. Baltimore: Williams & Wilkins Co., 1949.

LIFE AMONG THE DOCTORS. Paul de Kruif in collaboration with Rhea de Kruif. 470 pages. Price $4.75, cloth. New York; Harcourt, Brace and Co., 1949.

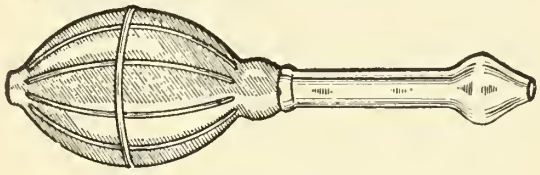
SURGICAL AND MAXILLOFACIAL PROSTHESIS. Oscar Edward Beder. 51 pages. Illus. Price $3.00, paper cover. New York: King's Crown Press, Columbia University, 1949.

THE VALUE OF HORMONES IN GENERAL PRACTICE. William Norman Kemp, M.D., Vancouver, British Columbia. 115 pages. Price $3.00, paper cover, spiral binding. Minneapolis: Burgess Publishing Co., 1949.

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WOMAN'S AUXILIARY

(Continued from Page 1146)

population is against a government-controlled program of medical care.

Miss Mary McGinn, director of the Women's Division of Whitaker & Baxter, spoke of the national education campaign and outlined the issues involved: "Our liberty is gradually being whittled away. Socialized medicine would be only an opening wedge to state ownership of banks, utilities and business."

The afternoon program centered around a panel discussion of public relations techniques. Participating were: Kenneth Wunsch, Northwestern National Life Insurance Company; P. Kenneth Peterson, Representative, state legislature; Arleth Haeberle, Radio Station WTCN; Joseph West, General Mills; Edwin Lewis, University of Minnesota professor; Mrs. H. F. Wahlquist, first vice president, Woman's Auxiliary to the American Medical Association.

CARE OF AGED AND INVALIDS SETS UP MEDICAL PROBLEMS

The care of the aged and the chronic invalid will be an increasing problem. This, the American Medical Association explains, is because the increased span of life, brought about by the decrease in infant mortality and decrease in mortality from infectious disease, has resulted in more people living to the age at which they are subject to the degenerative diseases of middle and old age.

"Since 1900 the population of the country has doubled, but the number of people over 64 has quadrupled," according to the association. "Paradoxical as it may sound, the reason we have an increasing number of chronic invalids is that these people have received good medical care in youth.

"The American people need greater provision for the care of chronic illness, but the buildings required need not be on as expensive a scale as those necessary for the care of acute illness.

"The American Medical Association, the American Public Health Association, the American Hospital Association and the American Public Welfare Association have jointly created a Commission on Chronic Illness. This commission hopes to stimulate the establishment of state programs."—*AMA News Feature.*

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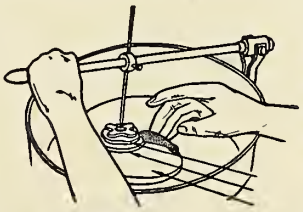
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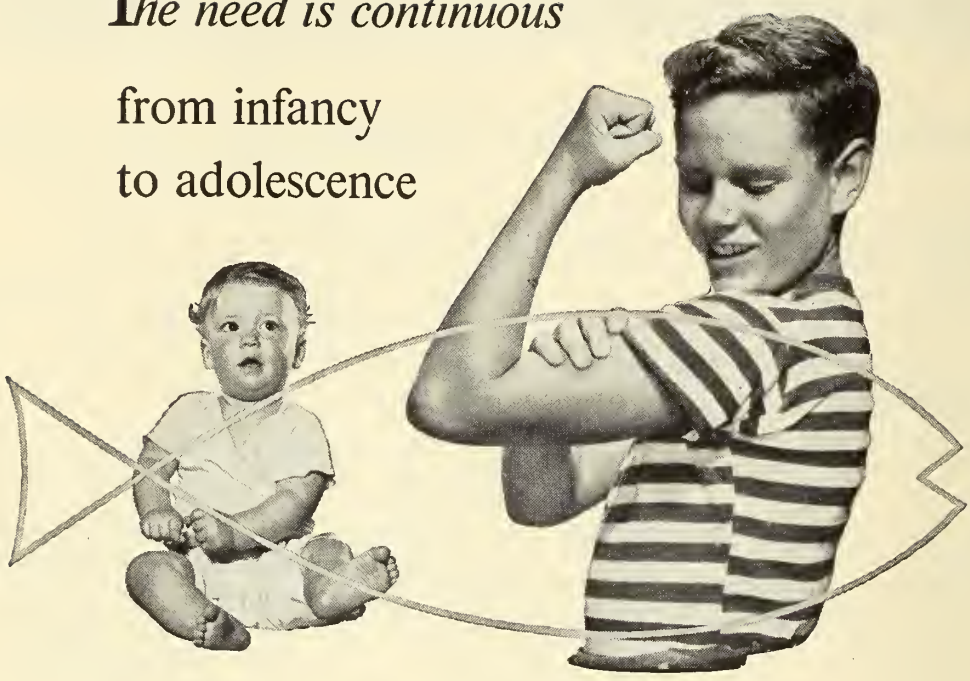
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*New and Nonofficial Remedies, Philadelphia, J. B. Lippincott, 1949, p. 234.





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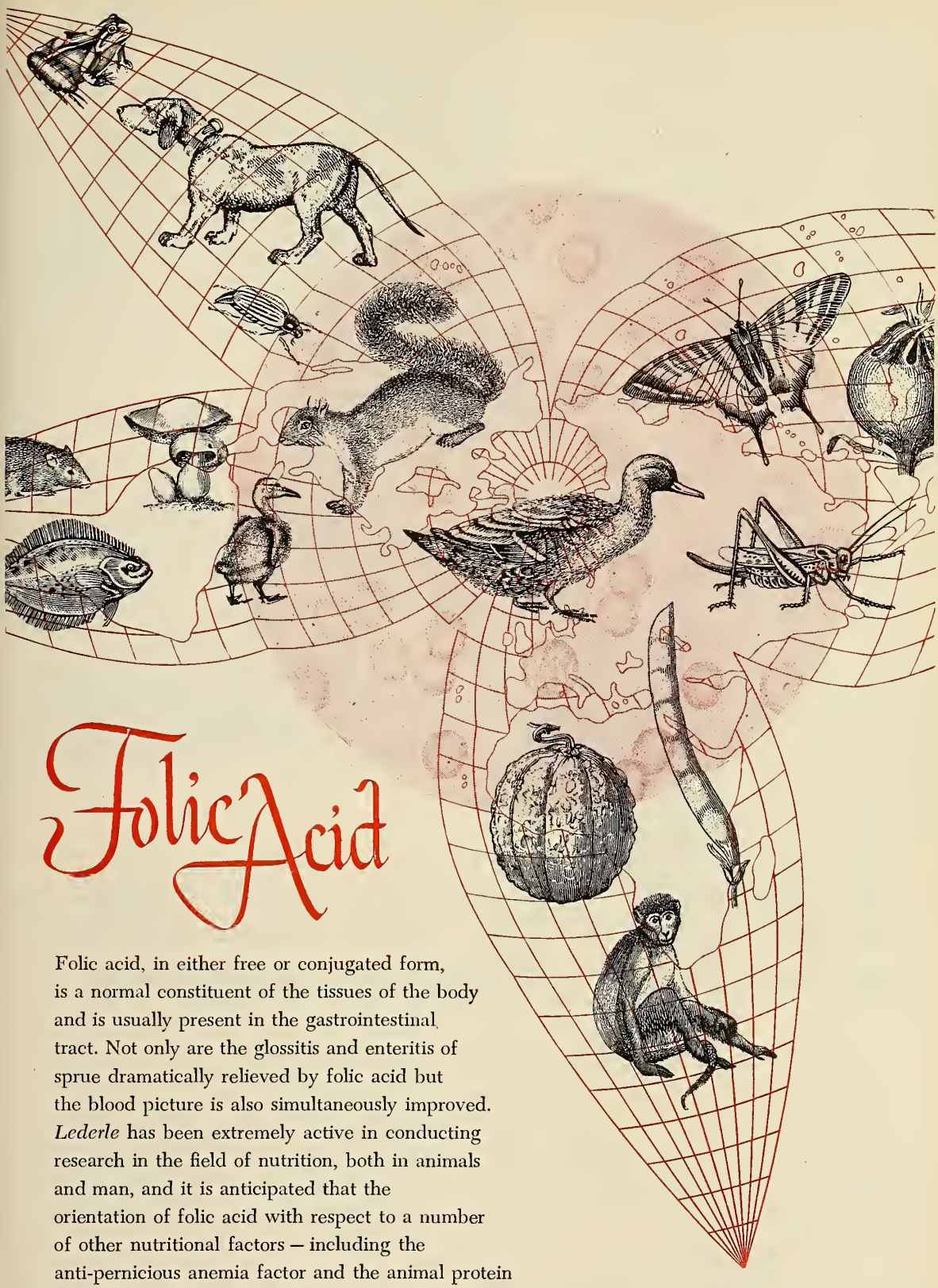
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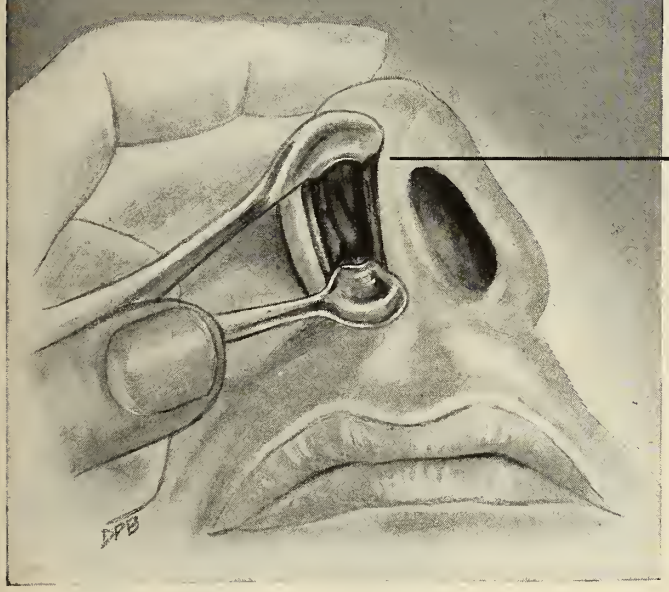
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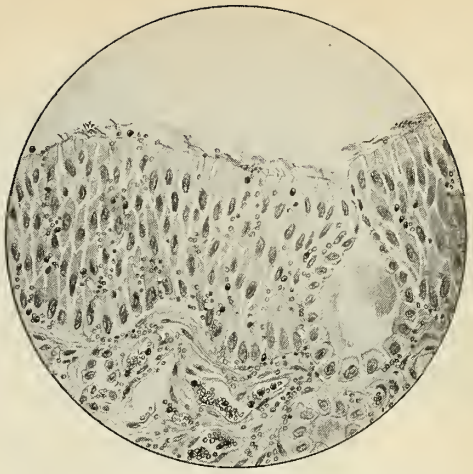
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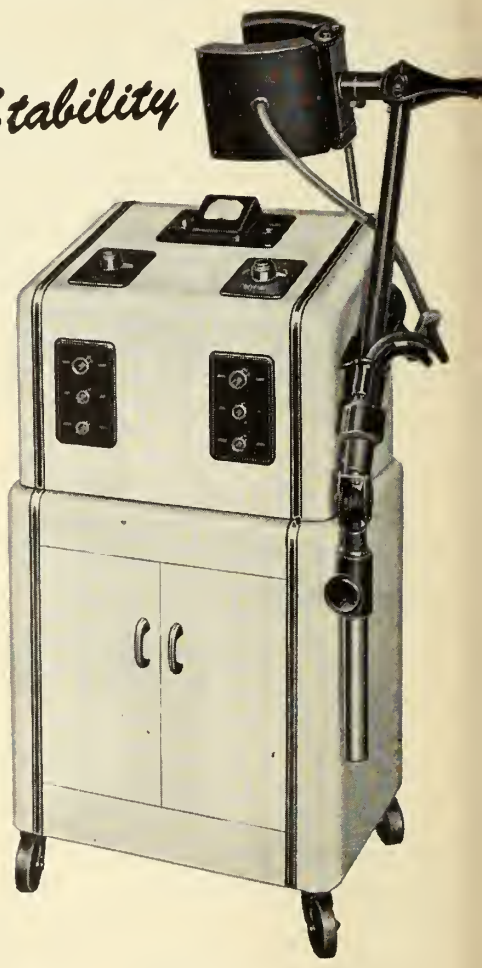
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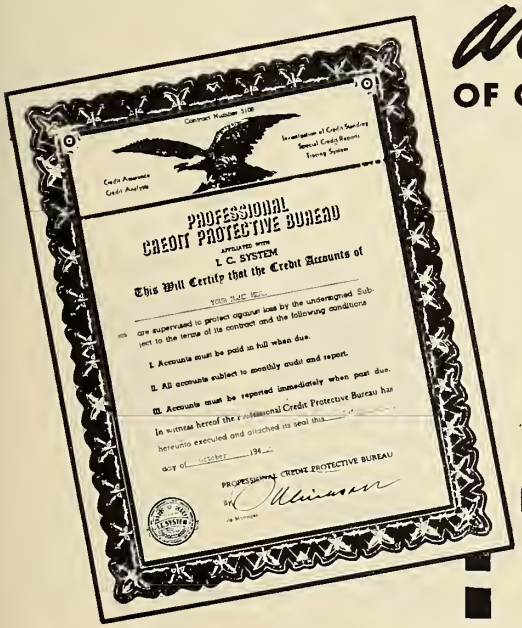
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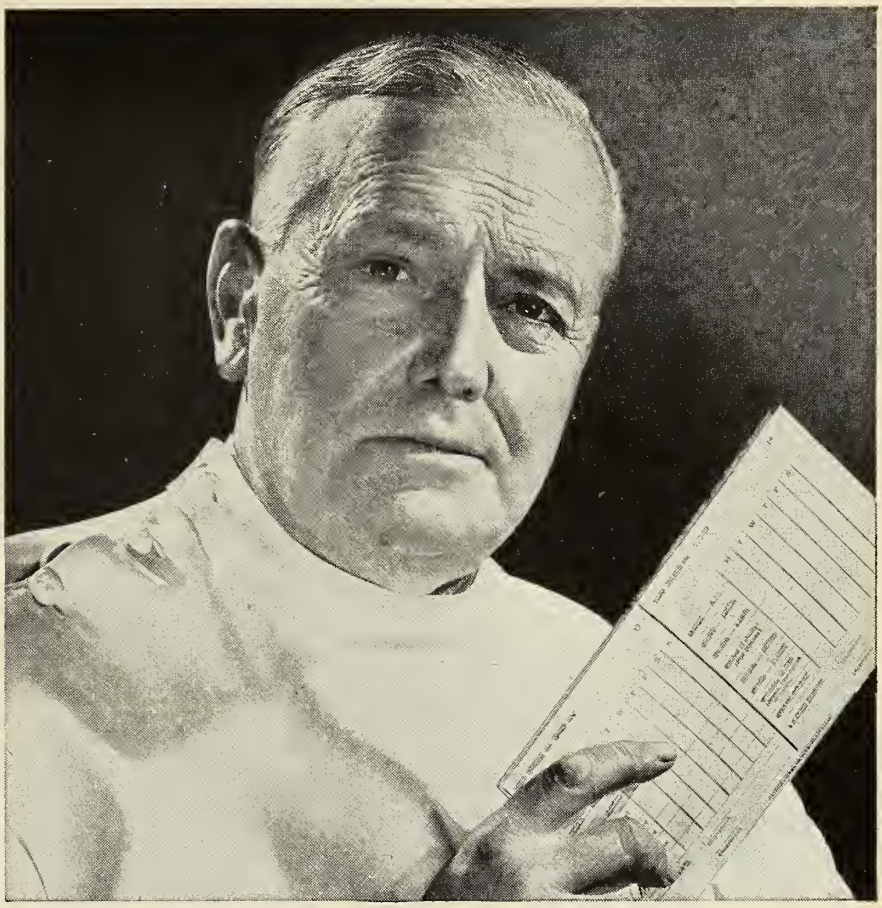
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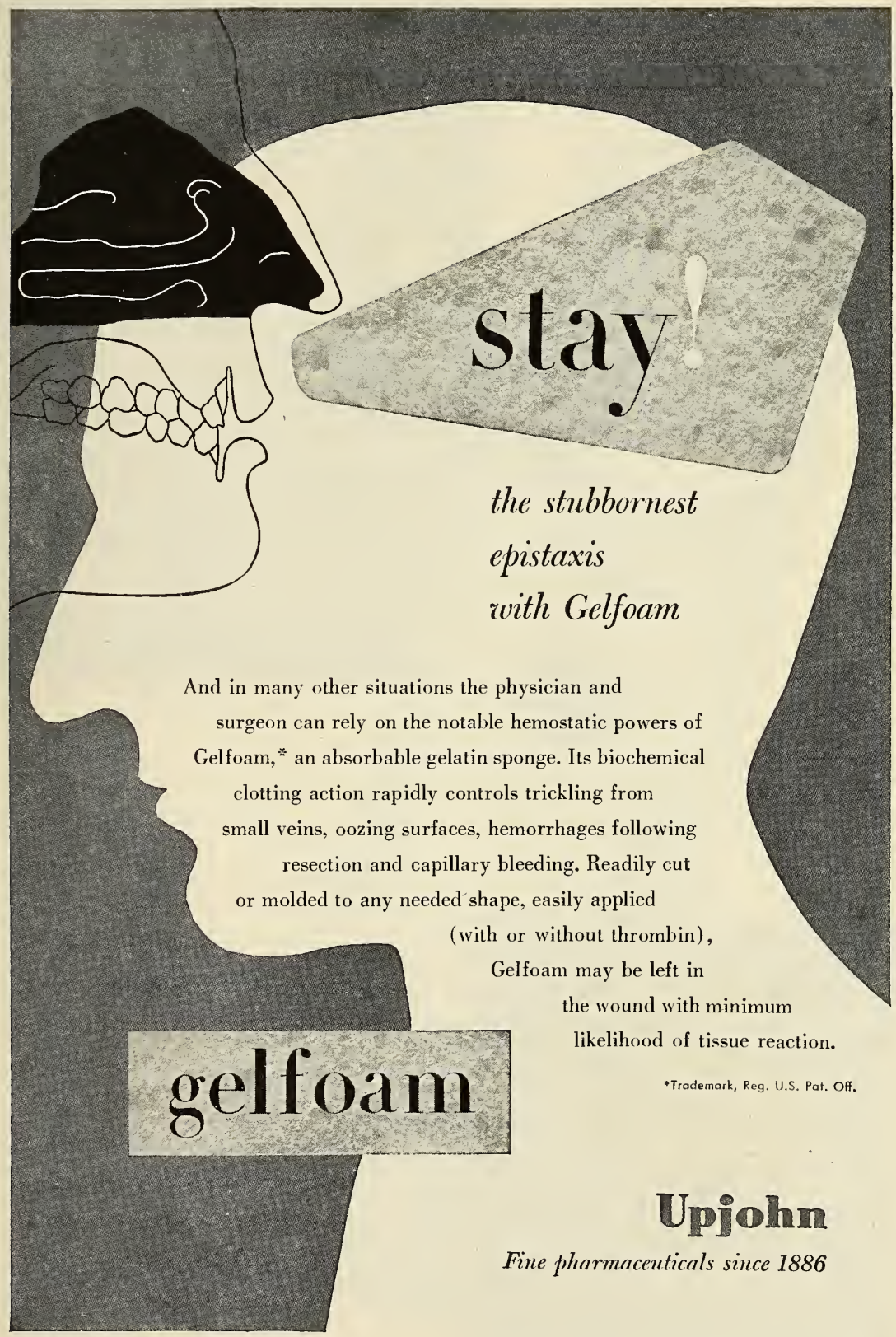
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Minnesota Medicine

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Volume 32 December, 1949 No. 12

CYTOLOGIC DIAGNOSIS OF MALIGNANT LESIONS OF THE ESOPHAGUS AND CARDIA OF THE STOMACH

HOWARD A. ANDERSEN, M.D., JOHN R. McDONALD, M.D., and ARTHUR M. OLSEN, M.D.
Rochester, Minnesota

IN RECENT years there have been numerous reports in the literature concerning the value of cytologic examination of serous fluids, urine, vaginal and cervical secretions, gastric juice, sputum and bronchial secretions in the diagnosis of carcinoma. It is the purpose of this paper to add another region of the human body which is amenable to this diagnostic procedure. Because there are a small percentage (perhaps 10 per cent) of cases of carcinoma of the esophagus and a larger percentage (perhaps 20 or 25 per cent) of cases of carcinoma of the cardia in which the results of roentgenologic and esophagoscopic examination are inconclusive, it was hoped that cytologic examination of smears might increase the percentage of cases in which a correct preoperative diagnosis could be made and also result in an earlier diagnosis than had been possible by roentgenologic and esophagoscopic examination. The work reported in this paper was done in the cytologic laboratory of one of us (J.R.M.) who has been working in close co-operation with the oral endoscopists at the Mayo Clinic.

Collection and Preparation of Material

The material used for cytologic examination was collected by several means.

1. At the time of esophagoscopy, the lesion either was touched directly with a cotton swab or fluid was aspirated from the esophagus and centrifuged. In several cases in which a lesion was not visible in the esophagus, the cotton applicator was pushed through the esophagogastric junction and withdrawn.

2. After dilatation of the esophagus, a cotton applicator was rubbed over the wire spiral of the dilator.

3. A strip of fine mesh gauze was wrapped around the end of an ordinary gastric tube and secured with a silk thread. The tube was then passed to the point of obstruction, or, if no obstruction was noted, it was inserted for approximately 16 inches (40.6 cm.) from the upper incisor teeth and withdrawn immediately.

Cytologic Examination

From three to five smears were prepared from the material obtained in each case. The slides containing the smears were placed immediately in a fixative solution consisting of equal parts of 95 per cent ethyl alcohol and ether. They were permitted to remain in this solution for thirty minutes, as recommended by Papanicolaou.[1] Delay in placing the slides in this solution causes drying of the smears and distortion of the cells, making them unfit for examination. The staining procedure was that which has been used by Woolner and one of us (J.R.M.).[2] The smears were examined methodically with the low-power objective of the microscope. When suspicious cells were observed, they were examined with the high-power objective.

Normal cells of the epithelium of the esophagus and cardia, and inflammatory cells such as leukocytes, lymphocytes and macrophages are not

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very difficult to distinguish from malignant cells. When neoplastic cells appear in clumps, the diagnosis frequently can be made from the appearance of a single clump of cells. A single cell may

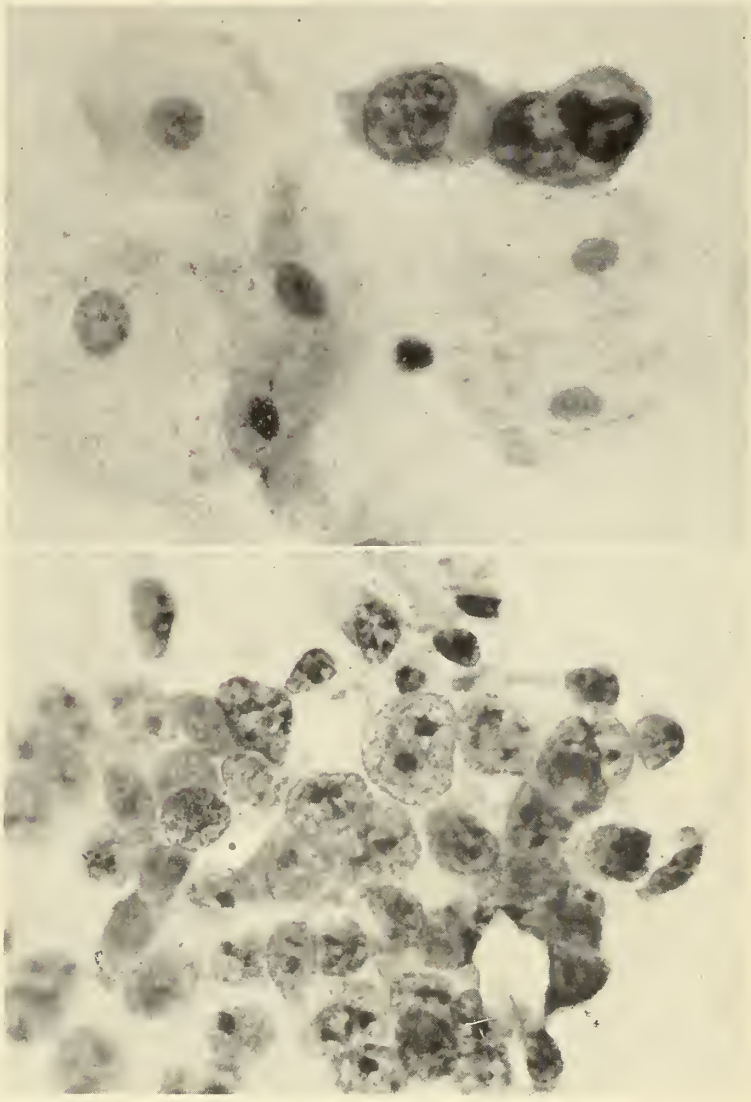


Fig. 1. (*above*) A small clump of malignant cells contrasted with normal squamous cells. The cytoplasmic-nuclear ratio of malignant cells is less and the cells stain more deeply than normal cells (x730).

Fig. 2. (*below*) A large clump of malignant cells. Many are merely naked nuclei; the chromatin is dense; nucleoli are prominent (x730).

arouse one's suspicion, but, as a general rule, it is probably unwise to conclude it is malignant until eight or ten such cells have been observed.

Malignant cells have several features in common. They stain more deeply than do normal cells (Fig. 1), owing to the fact that the nuclei have a greater affinity for hematoxylin. Because of this characteristic, a uniform and consistent staining procedure must be followed. Pale, swollen, degenerating cells frequently may be seen. These changes may be due to faulty technique such as allowing the smear to dry before it is immersed in the fixative solution. Malignant growths, however, contain greater numbers of degenerating cells than normal tissues; therefore, if a proper technique was used, the presence of many of these cells may arouse one's suspicion concerning the presence of a malignant lesion. A careful search may reveal well-preserved cells having characteristic malignant features.

One is attracted by the large size of the malignant cells. The cytoplasm may be increased in

amount, as it frequently is in cases of keratinizing squamous-cell carcinoma, or it may be decreased in amount and form a narrow rim around the nucleus. Occasionally, a naked nucleus may be seen (Fig. 2).

The nuclei vary in size and shape. They sometimes are round; at other times they are irregular, angular and polymorphous. These variations are seen best when the cells appear in clusters. The nuclear characteristics are best seen with the high-power objective of the microscope. The structure is heterogenous; it sometimes is dense (Fig. 2) but at times is loose (Fig. 3). Usually the chromatin is arranged in coarse, irregular fragments which are deeply stained. The nucleoli are larger than those of normal cells and they may be solitary or multiple. They also may be basophilic or acidophilic.

Evidence of mitosis rarely was observed in this study. In cases in which mitotic figures were seen in some of the cells, we observed other cells which did not contain such figures. In these cases, the diagnosis of malignant cells was made without depending on the presence of mitotic figures.

In some cases, the appearance of the cells was so characteristic that it was possible to predict the type of malignant lesion that was present. In cases of adenocarcinoma, the cytoplasm of the tumor cells may contain droplets of mucus which appear as light spots in stained smears. An acinar arrangement of the cells was not observed in any of our cases. In cases of squamous-cell carcinoma, cytologic examination of smears may disclose sufficient keratinization to permit one to predict that this type of tumor is present (Figs. 4 and 5). One malignant cell occasionally may be included in another and suggest the presence of a whorl or nest of cells (Fig. 5).

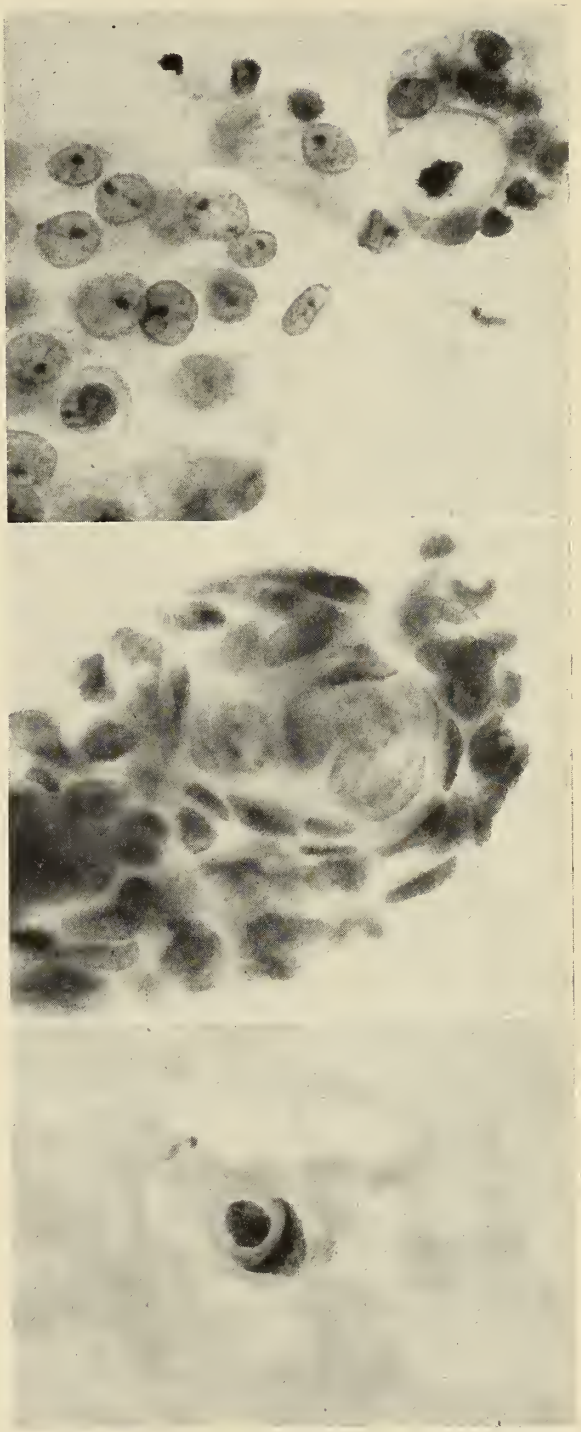


Fig. 3. (*above*) A clump of malignant cells with loose chromatin network (x730).

Fig. 4. (*center*) A group of malignant cells with keratinization and formation of a whorl of cells characteristic of squamous-cell carcinoma (x730).

Fig. 5. (*below*) Inclusion of one cell within another with "pearly body" formation characteristic of squamous-cell carcinoma (x730).

Material and Results

This report is based on eighty-six consecutive cases in which cytologic examination of smears of material obtained from the esophagus or gastric cardia apparently disclosed malignant cells which were considered indicative of the presence of a primary malignant lesion at one of these sites. In two (approximately 2 per cent) of the eighty-six cases, operation subsequently disclosed only benign hyperplasia of the squamous epithelium. The cytologic diagnosis of a malignant lesion, therefore, was falsely positive in these two cases. In one of the two cases, the operation was performed after the patient had been dismissed from the clinic. In the remaining eighty-four cases, the final diagnosis was as fol-

lows: squamous-cell carcinoma of the esophagus in forty-four cases, adenocarcinoma of the gastric cardia in thirty-nine cases, and leiomyosarcoma of the esophagus in one case.

In thirty-one of the forty-four cases of squamous-cell carcinoma of the esophagus, the diagnosis was confirmed by histologic examination. In twelve of the thirteen cases in which the diagnosis was not confirmed in this manner, the clinical signs and symptoms and the roentgenologic findings were considered characteristic of a malignant lesion. In the remaining case, the presence of a diaphragmatic hernia was suspected until cytologic examination of an esophageal smear disclosed carcinoma cells. A review of the history and the discovery of a small but hard lymph node in the left supraclavicular region led to the final diagnosis of carcinoma of the esophagus. Esophagoscopic biopsy failed to disclose any evidence of carcinoma in six cases.

An exploratory operation was performed in thirteen of the forty-four cases of carcinoma of the esophagus. In one of the thirteen cases, the only positive evidence of a malignant lesion was disclosed by cytologic examination of a smear made from material obtained from the wire spiral of the esophagoscope after diagnostic dilatation of the esophagus. In this case, a lesion of the esophagus was observed by both the roentgenologist and the esophagoscopist, but neither one of them made any comment concerning the nature of the lesion. Esophagoscopic biopsy did not disclose any evidence of a malignant lesion, but an exploratory operation revealed an inoperable squamous-cell carcinoma, grade 4, of the esophagus. In five of the thirteen cases in which operation was performed, the involved portion of the esophagus was resected.

In thirty-three of the thirty-nine cases of adenocarcinoma of the cardia of the stomach, the diagnosis was confirmed by histologic examination of tissue obtained with the esophagoscope or at the time of operation. In five of the six cases in which the diagnosis was not confirmed by histologic examination, the clinical signs and symptoms and the roentgenologic findings were characteristic of a malignant lesion. In the remaining case, the clinical signs and symptoms and the results of the first roentgenologic examination were indefinite. Dilatation of the cardia was performed, and cytologic examination of material obtained from the cardia disclosed malignant cells. Subsequent roentgenologic examination revealed a tumor of the cardia. In nine of the thirty-nine cases, esophagoscopic biopsy did not reveal any evidence of a malignant lesion.

An exploratory operation was performed in twenty-two of the thirty-nine cases. In six of the twenty-two cases, the presence of carcinoma cells was the only microscopic evidence of a malignant lesion before operation was performed. In all of the six cases, the diagnosis was confirmed by surgical biopsy or by microscopic examination of the excised tumor. Resection of the cardia was performed in ten cases.

In the one case of leiomyosarcoma of the esophagus, the diagnosis was confirmed by esophagoscopic biopsy. An exploratory operation revealed that the tumor was inoperable.

During the period in which the eighty-four cases of malignant tumors of the esophagus or gastric cardia were observed, cytologic examination of smears failed to disclose any evidence of malignant cells in 120 additional cases of various diseases of the esophagus or gastric cardia. A primary carcinoma of the esophagus or cardia was present in twenty-eight of the 120 cases. In fourteen of the twenty-eight cases, the smear was prepared from material obtained from the wire spiral of the dilator. Admittedly, this is the least satisfactory method of obtaining suitable smears. In the remaining fourteen cases, the smear was obtained by inserting an applicator through the esophagoscope. In six of the latter group of fourteen cases, biopsy disclosed a malignant lesion; in the remaining eight cases, it failed to disclose any evidence of a malignant tumor. The malignant lesion involved the gastric cardia in three of the twenty-eight cases. Biopsy failed to disclose any evidence of a malignant lesion in these three cases.

Comment

The results of this study indicate that cytologic examination of smears obtained from the esophagus and gastric cardia is of definite value in the diagnosis of primary malignant lesions of these organs. In our hands, this examination has been of more value in the diagnosis of malignant lesions of the gastric cardia than it has been in the diagnosis of malignant lesions of the esophagus. This is probably due to the fact that it usually is difficult for the esophagoscopist to obtain a speci-

men for biopsy in cases of adenocarcinoma of the cardia. In some of the thirty-nine cases of adenocarcinoma of the cardia, esophagoscopy did not reveal any lesion but cytologic examination of smears obtained from the cardia disclosed malignant cells. In two cases in which the diagnosis was made in this manner, biopsy did not disclose any evidence of a malignant lesion but an exploratory operation revealed that an adenocarcinoma was present.

Although statistical proof is lacking, we have gained the impression that cytologic examination of smears prepared from the wire spiral of the esophageal dilator will disclose malignant cells more frequently than will histologic examination of bits of tissue which adhere to the spiral. Cytologic examination of smears prepared from the spiral disclosed malignant cells in twenty-nine of the eighty-four cases, whereas histologic examination of adherent bits of tissue disclosed malignant cells in only seven of the twenty-nine cases.

The simplest method of obtaining smears for cytologic examination in cases in which the presence of a malignant lesion is suspected is to insert a gastric tube equipped with a gauze tip down to the cardia and withdraw the tube immediately. Smears then are prepared from the material on the gauze. Smears were obtained in this manner in ten cases. Cytologic examination of these smears disclosed malignant cells in eight of the ten cases; in two of these eight cases, it furnished the clue which led to the correct diagnosis. This method of obtaining smears is of value in cases of progressive dysphagia in which esophagoscopy either fails to disclose any lesion or is contraindicated or impossible. It also may be used to obtain material for cytologic examination when a trained esophagoscopist is not available. In our hands, it has proved of value in one case in which a carcinoma developed in a lye stricture which had been present for sixty years. Because carcinoma has an increasing tendency to develop in lye strictures as the years pass, cytologic examination of esophageal smears should be performed at regular intervals, particularly in cases in which such a stricture has been present for many years. The smears can be obtained by the method which has just been described or they can be prepared from material which adheres to the dilator in cases in which dilatation is necessary.

Summary

This paper is based on a review of eighty-six consecutive cases in which cytologic examination of smears obtained from the esophagus or gastric cardia apparently disclosed malignant cells which were considered indicative of the presence of a primary malignant lesion of one of these organs. In two (approximately 2 per cent) of the eighty-six cases, operation subsequently disclosed only benign hyperplasia of the squamous epithelium. The cytologic diagnosis of a malignant lesion, therefore, was falsely positive in these two cases. We do not think that it is possible to reduce the percentage of cases in which such an error will occur. In the remaining eighty-four cases, the final diagnosis was as follows: squamous-cell carcinoma of the esophagus in forty-four cases, leiomyosarcoma of the esophagus in one case, and adenocarcinoma of the gastric cardia in thirty-nine cases. In fifteen of the eighty-four cases, esophagoscopic biopsy did not disclose any evidence of a malignant lesion. An exploratory operation was performed in thirty-five of the eighty-four cases. In seven of the thirty-five cases, the disclosure of malignant cells by cytologic examination was the only microscopic evidence of a malignant lesion before operation was performed. In all of the seven cases, the cytologic diagnosis was confirmed by surgical biopsy or by histologic examination of the excised tumor. Cytologic examination of smears is of more value in the diagnosis of adenocarcinoma of the gastric cardia than it is in the diagnosis of carcinoma of the esophagus.

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TUBERCULOSIS IN OLDER AGE GROUP

That older persons now constitute the major focus of tuberculous infection is emphasized by recent autopsy studies which show that a relatively large number of persons supposedly succumbing to diseases other than tuberculosis were found to have this disease in active form. It is recognized that the disease in older persons is frequently mild and that the symptoms may be overlooked. —*Stat. Bull.*, Metropolitan Insurance Co., (Nov.) 1948.

MALIGNANT TUMORS OF THE LUNG

Their Diagnosis by Cytologic Examination of Sputum and Bronchial Secretions

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THORACIC surgery has, in recent years, become a practical procedure because of the marked lowering of mortality. One of the major surgical lesions of the lung for which pneumonectomy is done is bronchogenic carcinoma, which no longer can be regarded as a rare disease. Whether its incidence has increased is not a problem that is easy to settle. Part of the apparent increase, undoubtedly, is due to the increasing accessibility of the thoracic cavity and lungs to methods of diagnosis other than those that were available ten years ago. One of these methods is the examination of smears of sputum and bronchial secretions for malignant cells.

Bronchogenic Carcinoma

At the Mayo Clinic, we have a laboratory in which cytologic examination of the sputum and bronchial secretions is performed routinely in all cases in which the presence of bronchogenic carcinoma is suspected. On several occasions, we have reported the results which we have obtained with this method of examination.[1-7] During the three years that this laboratory has been in operation, this method of examination has been employed in approximately 6,000 cases. In more than 400 of these cases, it has disclosed the presence of carcinoma cells. In approximately four-fifths of the 6,000 cases, the material has consisted of sputum; in the remaining cases, it has consisted of bronchial secretions, bronchial smears or bronchial washings, all of which have been obtained by bronchoscopy. If the patient is not in the hospital, sputum is collected in a sputum bottle containing 8 to 10 c.c. of 95 per cent alcohol. Under such circumstances, the time that elapses between the collection of the material and the cytologic examination is not important. In cases in which the patients are in the hospital, it is possible to receive the sputum in the laboratory within a short time after it has been expectorated. In these cases, we have been using fresh sputum. If any secretions are present in the affected bronchus, they are collected by the bronchoscopist. If secretions are not present, the bronchoscopist may swab the affected mucosa with an applicator or he may obtain washings by instilling 5 c.c. of isotonic salt solution and aspirating it subsequently. A smear is made on a slide and fixed in a mixture of alcohol and ether according to the method of Papanicolaou. If bronchial washings are used, they should be centrifuged before the smear is made. We routinely stain the smears with hematoxylin and eosin. The chief advantage of this method of staining is its simplicity.

In our laboratory, trained technicians scan the smears after they have been stained. In order that they may scan the smears properly, technicians must be trained in the identification of cancer cells. The necessary period of training varies from nine months to one year. The final diagnosis is made by a cytologist or pathologist. It frequently is necessary to examine more than one specimen. In cases in which examination of one specimen of sputum fails to disclose carcinoma cells, we endeavor to examine three specimens. We believe that the sputum and bronchial secretions should be examined without any knowledge of the physical or roentgenographic findings in a given patient. If this is done, the pathologist will not be influenced by the opinion of the clinician or roentgenologist.

The advantages of using sputum instead of bronchial secretions are obvious. Since sputum is a waste product which can be collected easily without discomfort to the patient, several specimens may be examined in each case. We have examined as many as fifteen specimens in one case. The disadvantage of using sputum is that it is more dilute than are bronchial secretions. As a result of this dilution, a longer time is required for the examination of sputum. In the average case in which the sputum does not contain any carcinoma cells, approximately forty-five minutes are required for the examination.

The characteristics which enable one to recognize exfoliated carcinoma cells are those which are generally known to pathologists. Usually,

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carcinoma cells are larger than the normal cells, there is variation in the size and shape of the cells, the nuclei are hyperchromatic and the nucleoli are prominent. On the other hand, in at least one cell type in bronchogenic carcinoma (small or "oat-cell"), the cells are smaller than the normal mucosal cells of the bronchus. Cytologic examination of the sputum and bronchial secretions is chiefly of value in the diagnosis of bronchogenic carcinoma. It is of particular value in cases in which bronchoscopic biopsy is impossible owing to inaccessibility of the lesion.

An exploratory operation has been performed in 144 of the 400 cases in which cytologic examination of the sputum or bronchial secretions has disclosed carcinoma cells at the clinic. In seventy-nine (54.8 per cent) of the 144 cases, biopsy also disclosed the presence of carcinoma before operation was performed. In the remaining cases, the only miscroscopic evidence of a malignant lesion was the presence of carcinoma cells in the sputum or bronchial secretions. Pneumonectomy or lobectomy was performed in seventy-seven of the 144 cases. In thirty-two of these seventy-seven cases, the only microscopic evidence of carcinoma was disclosed by cytologic examination of the sputum or bronchial secretions. The value of this diagnostic method has been questioned because the presence of carcinoma cells in the sputum or bronchial secretions has been said to be a late manifestation of bronchogenic carcinoma. In this connection, it is interesting to note that the presence of carcinoma cells in the sputum or bronchial secretions was the only microscopic evidence of carcinoma in thirty-two of the seventy-seven cases in which the lesion proved to be operable.

This method of diagnosis is particularly valuable in cases in which a bronchogenic carcinoma is situated in an upper lobe or involves a small bronchus at the periphery of the lung. Because of physical reasons, the upper lobe is particularly inaccessible to the bronchoscopist. Of the malignant tumors which involve the upper lobe, Pancoast's tumor and those which cause obstruction of the superior vena cava are of particular interest.

In order to determine the value of cytologic examination of the sputum and bronchial secretions, we recently made a study of the clinical records and follow-up data in 588 consecutive cases in which this type of examination was performed at the clinic.[7] The presence of bronchogenic carcinoma was proved or was strongly suspected in 147 of these cases. The examination disclosed carcinoma cells in 100 (68 per cent) of the 147 cases; in the remaining forty-seven cases, it failed to disclose such cells. In none of these cases was a falsely positive diagnosis of bronchogenic carcinoma made on the basis of the cytologic examination. In some of the forty-seven cases in which the examination failed to disclose carcinoma cells, it seems probable that examination of a larger number of specimens would have disclosed such cells. We wish to emphasize that bronchogenic carcinoma cannot be assumed to be absent in cases in which this method of examination does not disclose carcinoma cells.

In a previous paragraph, we said that cytologic examination of the sputum or bronchial secretions had disclosed carcinoma cells in more than 400 cases which have been observed at the clinic. In seven of these cases, a falsely positive diagnosis of bronchogenic carcinoma was made on the basis of the cytologic findings. It is possible, however, that a falsely positive diagnosis was made in a few more cases. In many cases of inoperable carcinoma, it is impossible to obtain a specimen of the lesion for microscopic examination. This is particularly true in cases in which the lesion is inaccessible to the bronchoscopist. It is evident, therefore, that the cytologic examination resulted in a falsely positive diagnosis of bronchogenic carcinoma in approximately 2 per cent of the cases. This should be remembered by physicians who are performing this examination or who are relying on the results of such examination.

The following case illustrates the value of cytologic examination of the sputum.

A man, aged fifty-one, had had a severe "cold" for a month and a half before he came to the clinic. His temperature had been high and he had coughed considerably. On one occasion he had expectorated a small amount of blood. Administration of penicillin had caused his temperature to return to normal. Roentgenographic examination of the thorax disclosed a mass in the hilus of the left lung (Fig. 1). The presence of a bronchogenic carcinoma was suspected. Cytologic examination of the sputum on two occasions disclosed carcinoma cells of the squamous type (Fig. 2). Bronchoscopy was performed twice. On each occasion, it failed to disclose any gross abnormality. On one of these occasions, a specimen was removed for biopsy, but microscopic examination of the specimen did not reveal any evidence of a neoplasm, although cytologic examination of the bronchial secretions disclosed carcinoma cells. Exploratory thoracotomy revealed a squamous-



Fig. 1. Roentgenogram showing a mass (bronchogenic carcinoma) in hilus of left lung.

cell carcinoma which involved the secondary branches of the bronchus of the upper lobe of the left lung (Fig. 3). The carcinoma measured 4 by 3 by 2 cm. and involved 3 of the hilar lymph nodes. The convalescence was uneventful, and the patient was alive six months after the operation.

Alveolar-cell Tumors

We have observed seven cases of alveolar-cell tumor in which resection was performed. Cytologic examination of the sputum was performed in five of the seven cases. In three of the five cases, malignant cells were found in the sputum; in one case, the presence of malignant cells was questionable; in the remaining case, the examination did not disclose any malignant cells. In an occasional case, it is possible to suggest the presence of an alveolar-cell tumor on the basis of the cytologic findings; in most cases, however, the examination merely will disclose malignant cells. Whether alveolar-cell tumors should be treated surgically or nonsurgically is questionable. It seems certain, however, that surgeons will see more and more of these tumors.

Metastatic Tumors

Cytologic examination of the sputum and bronchial secretions is of minimal value in the diagnosis of metastatic tumors of the lung. This is partially due to the fact that metastasis usually occurs by way of the blood stream and metastatic implantation occurs outside of a bronchus. Ulceration, therefore, usually is a late manifestation of metastatic tumors of the lung. Malignant cells cannot be exfoliated until ulceration occurs. Even after ulceration has occurred, cytologic examination of the sputum and bronchial secretions will not disclose malignant cells consistently. In our hands, this method has been more valuable

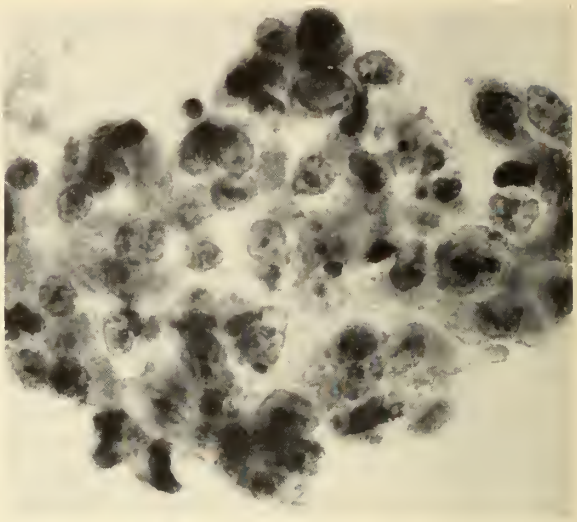


Fig. 2. Carcinoma cells in sputum in case of bronchogenic carcinoma (hematoxylin and eosin stain x525).



Fig. 3. Squamous-cell carcinoma of secondary branches of bronchus of upper lobe of left lung.

in the diagnosis of metastatic carcinoma than it has been in the diagnosis of metastatic sarcoma. It has disclosed malignant cells in several cases in which an esophageal carcinoma has eroded into a bronchus and produced a broncho-esophageal fistula.

Adenomas and Cylindromas

In our laboratory, cytologic examination of the sputum and bronchial secretions has consistently failed to disclose atypical cells in cases of adenoma or cylindroma of the lung. In cases of either type of tumor, the overlying mucosa almost always is intact; therefore, neoplastic cells cannot be exfoliated. This method of examination occasionally has been of great help in the differential diagnosis of bronchial adenoma of the carcinoid type and small-cell bronchogenic carcinoma. On the basis of a small biopsy these tumors may be difficult to distinguish histologically. In cases of small-cell bronchogenic carcinoma, the examination usually will disclose characteristic cells; in cases of adenoma, it will not disclose such cells.

Summary

Cytologic examination of the sputum and bronchial secretions is very useful in the preoperative diagnosis of bronchogenic carcinoma. It should be remembered, however, that this method of examination results in a falsely negative diagnosis of bronchogenic carcinoma in approximately 30 per cent of cases and that it results in a falsely positive diagnosis of this type of tumor in approximately 2 per cent of cases.

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Discussion

Dr. Kano Ikeda, Saint Paul: I feel highly honored to be invited to discuss Dr. McDonald's paper. It is an important contribution to medicine which should receive the recognition it deserves. I have practically no experience with cytologic diagnosis of cancer in sputum and bronchial secretions, and will not be able to add further to his excellent presentation.

I have followed with much interest the work of Dr. McDonald and his associates. He and his co-workers are to be complimented on the remarkable results they have been getting in the diagnosis of pulmonary cancer through the examination of the sputa and bronchial secretions. Their work has been thorough and painstaking. Recent reports indicate the diagnostic accuracy of this method to be anywhere from 75 to 92.5 per cent, and more sensitive than the roentgenogram or bronchoscopic biopsy. To obtain the results, however, adequate facilities must be provided for the work, namely, the properly equipped laboratory, the trained technician, the trained cytologist, and the full co-operation of the clinician, the nurse, and the patient.

In sanatoria and institutions where only cases of pulmonary disease are taken care of, a department devoted to this work seems indicated. In general hospitals and clinics, the one in charge of cytological diagnostic work must personally see that the specimens are properly treated. Without the proper facilities and personnel trained to do this work, no physician or laboratory should attempt to utilize this method. No pathologist, furthermore, should feel that he is fully qualified to make cyto-diagnosis, simply because he is a pathologist.

It was an anatomist who developed a cytologic method of cancer diagnosis, and not the pathologist. It was a gynecologist who first saw the merit in the method and made the practical application of the technique in the diagnosis of cancer, and not the pathologist. Indeed, for many years, the pathologist had been taught to belittle a diagnosis of cancer by the appearance of single cells. Today, however, the pathologist has come to accept the cytologic method as an important additional laboratory aid in the diagnosis of cancer, equally as effective in the experienced hands as biopsy. Indeed, if we are to believe recent published reports, the cytologic diagnosis is often more sensitive and more readily obtainable, with equal dependability, in certain types of cancer than the biopsy. This is particularly true in the detection of early carcinoma of the uterine cervix, as in cases of obscure pulmonary lesions, in which neither the bronchoscopic biopsy nor the roentgenograms can afford any assistance, as Dr. McDonald so clearly demonstrated.

The limitations of bronchoscopy and roentgen examination for pulmonary cancers are well appreciated. Bronchoscopy is done only by experts, and roentgen diagnosis is often difficult and controversial. Repeated smear examination of the sputum can be carried out in any locality, which is a great advantage. Experimentally, it was possible to demonstrate tumor cells by this method in 58 per cent of cases, before the tumor

(Continued on Page 1230)

THE CANCER DETECTION CENTER AT THE UNIVERSITY OF MINNESOTA

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WHEN a cancer is localized without lymph node metastases the chance of cure is good with our present-day tools. However, when the cancer has progressed and lymph node metastases are present, the cure rate drops markedly. Thus, in the breast, a five-year cure rate may be expected of 75 to 80 per cent when nodes are not involved, but of only 30 per cent or less, when there are metastases. In the stomach, results fall from approximately 50 to 9 per cent.[4] Similar contrasts are present in other organs. The fact remains, however, that a distressingly small proportion of cancers that come to treatment are in an early localized stage. This aspect, that of early detection of cancer, is still to be improved upon in peripheral cancers such as the breast. However, the internal cancers of the gastrointestinal tract present the really acute problem in this regard. One's attention is called to such tumors only by symptoms or by late signs such as bleeding, anemia or weight loss, and by then lesions without nodal involvement are few.

The idea of a Cancer Detection Center is based upon these facts, that cancer in its early stages is a silent disease, and that with our present-day methods of treatment, our primary hope for increasing the number of cures is to treat cancer when it is early. This means, then, picking the cancer up in asymptomatic people.

The Center at the University of Minnesota was begun March 1, 1948, with the approval of the Minnesota State Medical Association. It is a clinical experimental project which will have a limitation of five years, after which the results will be evaluated to determine its worth. It was originally planned to examine 1,000 new patients each year, with each patient returning every six months for re-examination.[10] From March 1, 1948, to March 1, 1949, 1,164 new patients were examined, and the patients are returning for re-examination in one year. It is planned that at the end of five years we will have 5,000 patients in all, upon which to formulate our conclusions. Our primary purpose is, of course, to pick up early malignancies in apparently well individuals. In addition, however, we want to determine the practicability of such a project, and also to develop methods of screening by which those patients may be singled out who are most apt to harbor a neoplasm and who, therefore, are more in need either of the routine or of various specific examinations. In this way, a thorough examination may be done of a few, rather than a more superficial examination of many.

Only symptom-free, apparently well individuals forty-five years of age and over are examined. They all are given a routine complete examination which occupies the greater part of one day.

In the Morning:

1. Complete blood count.
2. Urinalysis.
3. Blood Wassermann test.
4. Occult blood in the stool (both by guaiac and benzidine tests) after a meat-free diet for three days.
5. Gastric expression, using histamine (1 dose, 0.5 mg.) as a gastric acid stimulant.
6. A proctoscopic examination by a proctologist.
7. Female patients have a complete pelvic examination by a gynecologist, with papanicolaou smears.
8. Photofluorogram of chest.

In the Afternoon:

1. Ear, nose and throat examination by an otolaryngologist.
2. Prostate examined by urologist.
3. General physical examination by one of our doctors with correlation of all findings.

The latter doctor then discusses the results with the patient and the patient is told to return to his family doctor for more detailed information. In particular, if any cancer or similar lesion is found, the patient is told to return to his doctor for immediate treatment. No therapy is given at the Center. Each patient is required to give the name of his personal physician, and to the latter is sent a complete résumé of our findings.

This ends the routine examination. Any further x-rays are taken at a later date by appointment. Gastric x-ray examinations are not taken routinely. We feel that there is a particular need for limiting the field to those most likely to harbor a gastric lesion. For instance, St. John, Swenson, and Harvey in 1944 subjected 2,413 pa-

Presented at the annual meeting of the Southern Minnesota Medical Association at Red Wing, Minnesota, September 12, 1949.

tients over the age of fifty without gastric complaints to a brief fluoroscopic examination after barium swallow. They found two silent gastric carcinomas and one lymphosarcoma, an incidence of silent gastric malignancy of 1.2 per thousand patients.[7] Dailey and Miller in 1945 examined 500 asymptomatic men over forty-five years of age after a barium meal and found three gastric lesions: a benign gastric ulcer, a polyp, and an antral gastritis.[2] The need for screening such patients so that x-rays may be taken only of those most likely to develop a gastric malignancy is apparent.

The tendency of patients with carcinoma of the stomach to have a low free acid on gastric analysis is known. At the University Hospitals, patients with carcinoma of the stomach have shown achlorhydria in 65 per cent of cases after histamine gastric analysis. Another 21 per cent show hypochlorhydria, i.e., a free acid of 30 degrees or less.[3] In comparison, a group of patients of the same age group, but with carcinoma in other organs than the stomach, showed achlorhydria or hypochlorhydria in only 56 per cent of the cases.[5]. Based upon these facts, the following study has been carried out. Since August 1, 1945, all patients over the age of fifty, who passed through the University Hospital outpatient clinic, and who had no symptoms of gastric malignancy, were subjected to a gastric analysis, using histamine (0.5 mg.) in triple doses at half-hour intervals as a stimulant. All those who had less than 30 degrees of free acid were given a routine gastrointestinal x-ray examination.[11] Up to August 1, 1949, gastric analyses were done on 4,172 such patients; 1,419 proved eligible for gastrointestinal series. X-rays of this group of 1,419 revealed six gastric cancers, twenty-five gastric polyps, and one questionable cancer. The significance of gastric polyps as a precancerous lesion has been the subject of some discussion.[1,6,8,9] To go into this problem is not within the realm of this paper. However, we might point out that of eighty-five patients with polyps at the University Hospital who have been followed, thirty-one have been operated on and seven of these proved malignant. Whether these represent carcinomas derived from benign polyps or polypoid carcinomas, malignant from start, remains, of course, a moot point.

With this background we have relegated gastrointestinal x-ray examinations at the Cancer Detection Center to the following patients:

1. Individuals with histamine achlorhydria and hypochlorhydria (less than 30 degrees free acid).
2. Patients with occult blood in the stool.
3. Patients with a strong family history of gastric carcinoma.
4. Patients with unexplained hemoglobin level below 11.0 grams.
5. Patients with vague symptoms of gastric pathology which in any sense could be interpreted as being due to gastric carcinoma by the examining physician.

Similarly, x-ray examination of the colon after barium enema has been limited to the following:

1. Patients with abnormal findings on proctoscopic examination.
2. Patients with occult blood in the stool.
3. Patients with unexplained hemoglobin level below 11.0 grams.
4. Patients with a family history of large bowel malignancy.
5. Patients who have vague symptoms that could possibly be conceived as being due to malignancy of the large bowel by the examining physician.

TABLE I

Total number of patients (male, 1049—female, 1057)	2106
Carcinomas:	
Basal cell carcinoma of the skin	6
Squamous cell carcinoma of the skin	2
Carcinoma of the stomach	1
Carcinoma of the cecum	2
Carcinoma of the sigmoid	4
Carcinoma of the rectum	3
Carcinoma of the esophagus	1
Carcinoma of the prostate	1
Chronic lymphatic leukemia	1
Lymphosarcoma involving the bone marrow	1
Lymphosarcoma of submaxillary gland	1
Total	23

From March 1, 1948, to July 31, 1949, 2,106 patients have been through the Center (Table I). In this group, twenty-three patients with carcinoma were found. Details of these lesions appear in Table I. Eleven of these tumors were in the gastrointestinal tract. Of these eleven, six were early lesions, in that they were confined to the organ involved and the regional lymph nodes showed no metastases. The carcinoma of the stomach, also with no lymph node metastases, was less than a centimeter in diameter and barely invaded the submucosa. These figures, though obviously small, are interesting when contrasted with the patient who comes to treatment for alimentary tract carcinoma through routine channels. At the University Hospitals, approximately 80 per cent of the latter cases show regional lymph node metastases.

TABLE II

Precancerous lesions:	
Senile keratosis of the skin	50
Gastric polyps	2
Kraurosis vulvae	7
Leukoplakia	36
Pigmented naevi in areas of irritation	152
Polyp of the vocal cord	1
Multiple adenomas and polyps of the rectum and colon	228
Solitary thyroid adenomas	21
Total	497

TABLE III

Benign Tumors:	
Fibroma	42
Lipoma	18
Retention cysts	52
Papilloma	41
Osteoma	4
Hemangioma	14
Adenocystic disease of the breast	1
Adenoma of the prostate	1
Uterine Myomata	4
Nabothian cyst	26
Ovarian cyst	3
Verruca	3
Seborrheic keratosis	30
Polyps of the gum and nose	4
Polyps of the cervix uteri	24
Pyrogenic granuloma	3
Thyroglossal duct cyst	1
Polyp—axilla	1
Papule—tongue	1

Four hundred ninety-seven precancerous lesions were found (Table II). The most worthwhile finding here was that 228 patients (10.8 per cent) showed adenomas or polyps of the rectum and colon. Two hundred seventy-three individuals with benign tumors were likewise found (Table III). Six hundred sixty-six non-neoplastic lesions requiring medical attention were also discovered.

While it would seem impractical to take gastrointestinal x-rays and barium enema x-rays on every patient, the use of such screening methods as described above has enabled us to add these examinations for certain patients. It is hoped that further development of such filters will let us limit this group to a smaller number, yielding an even higher percentage of positive findings.

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AUREOMYCIN HYDROCHLORIDE

Aureomycin is an antibiotic produced by fermentation using the organism Streptomyces aureofaciens. It is used in the form of the hydrochloride.

For tests and standards, see regulation under Sec. 507. Food, Drug and Cosmetic Act, copies of which are obtainable from the Division of Antibiotics, Food and Drug Administration, Washington, D. C.

Actions and Uses.—In vitro aureomycin hydrochloride is effective against certain strains of beta hemolytic streptococci, nonhemolytic streptococci, group D; alpha hemolytic streptococci, pneumococci, staphylococci, Escherichia coli, Aerobacter aerogenes, Klebsiella pneumoniae, Bacillus subtilis and Corynebacterium hoffmanii. In embryonated eggs it has an effect against rickettsiae and certain large viruses.

Clinically, aureomycin hydrochloride has been reported to be effective in the treatment of Rocky Mountain spotted fever, typhus, scrub typhus, murine typhus, and Brills' disease in the rickettsial group; Q fever, primary atypical pneumonia, beta hemolytic streptococcic infections, urinary tract infections produced by E. coli, A. aerogenes, staphylococci or streptococci. It should not be used in systemic infections produced by Proteus vulgaris or Pseudomonas aeruginosa. It may also be used in staphylococcic and pneumococcic infections, in acute brucellosis and in subacute bacterial endocarditis which does not respond to penicillin.

Aureomycin hydrochloride, suitably buffered, may be used locally in the eye against a variety of ocular viral infections, such as inclusion conjunctivitis, follicular conjunctivitis and ocular bacterial infections caused by susceptible organisms.

The drug produces nausea, vomiting and diarrhea in a fair number of patients.

Dosage.—Severe infections require 5 to 10 mg. per kilogram of body weight every four hours orally.

Mild infections can be treated with oral doses of 5 mg. per kilogram of body weight every four hours.

Solutions for ophthalmic use may be prepared by adding 5 c.c. of sterile distilled water to 25 mg. of hydrochloride. One or two drops every two hours in the affected eye will usually suffice to control the condition.

Lederle Laboratories Division, American Cyanamid Co., Pearl River, N. Y.

Capsules Aureomycin Hydrochloride: 50 mg. and 250 mg.

Aureomycin Hydrochloride: 50 mg. vial of crystalline material, each packaged with a 10 c.c. vial of 0.75 per cent of sodium carbonate solution as a diluent for injection.

Aureomycin Hydrochloride: 25 mg. with sodium chloride 62.5 mg. and sodium borate 25 mg. in vials with dropper to be diluted with distilled water for ophthalmic use.—*Journal American Medical Association,* October 22, 1949.

NEW FORMS OF VITAL RECORDS FOR 1950

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Minnesota State Board of Health
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THE PROCEDURE prescribed for the registration of vital statistics constitutes what is commonly spoken of as the system of bookkeeping for public health. Just as the accounting methods of the business world are found not infrequently to be outmoded, the forms and processes employed in the state system of vital registration likewise can become less adaptable to the changing concepts of public health practices and require modernization. Periodically, the Minnesota birth and death record forms are redesigned to elicit such new factual or statistical data as are deemed essential to further the advancements in the field of preventive medicine and public health.

Since the turn of the century these adjustments in the style and content of the vital statistics forms have been made regularly at ten-year intervals. The progress which has been charted for the coming decade in terms of public health statistical accomplishments will be readily traceable to the efforts of the World Health Organization. Since its formation in 1946 it has been instrumental in the formulation of an International Statistical Classification which combines both morbidity and mortality data in its scope. American medical authorities, participating in the work as members of expert committees, have made valuable contributions to its development. The classification was unanimously recommended for world-wide adoption by the International Conference for the Sixth Decennial Revision of Diseases, Injuries and Causes of Death which was convened by the French Government in April, 1948. It was prescribed for international use in WHO Regulation No. 1 on July 24, 1948, by the World Health Assembly.

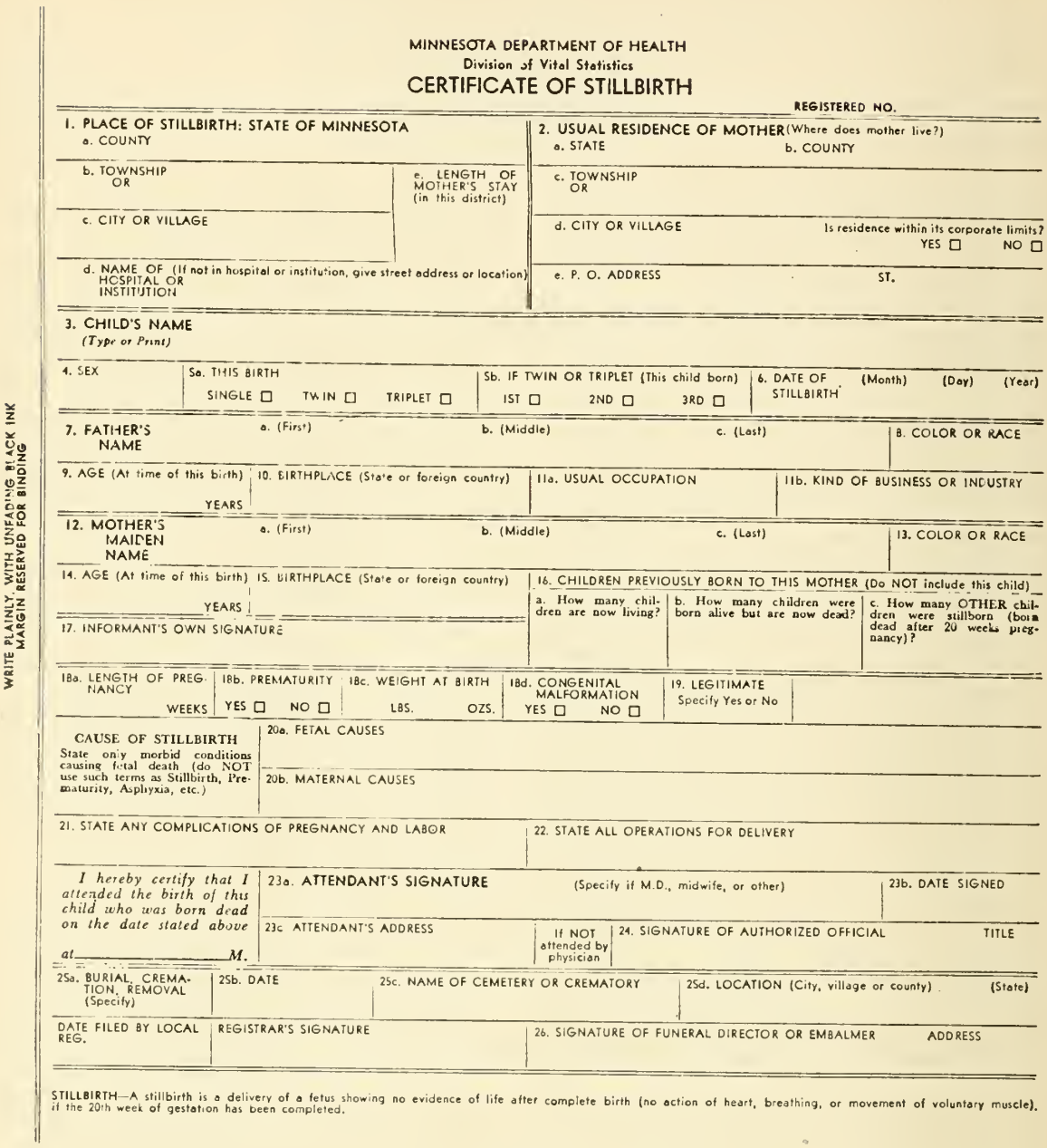
The Sixth Revision of the International Lists of Diseases and Causes of Death has only recently been published. The coding of causes of death under these new requirements has necessitated an alteration in the form of the medical certification. The Minnesota revised standard Certificate of Death for 1950 contains this new certification. The Certificate of Live Birth has also been improved, and the State Board of Health, departing sharply from precedent, has adopted a separate form for the reporting of stillbirths.

These new forms of certificates will greatly enhance the Minnesota registration system for two principal reasons. Uniformity on a national plane is achieved for the first time not only in the format but in the vital data which will now be called for in these records. For each individual state this represents a distinct gain which will become more pronounced as other countries of the world adopt this standardized pattern. Less difficulties will be encountered in the future in the preparation and interpretation of state, regional, national and even international tabulations of vital statistics. A reliable and uniform basis will be afforded for the comparison of data from all areas. The production of much needed statistical compilations, the fundamental tools of public health, will be expedited. Furthermore, the effective tapping of these broader, more complete and readier sources of essential material can only result in the strengthening of program planning, co-ordination and control in health agencies.

Secondly, a classification of world-wide acceptance and application, furnishing a practical coding treatment of the diagnoses of illness and of the causes of death, should, in a relatively short time, be advantageous in other respects. A marked improvement reflected through these means in any phase of public health in any part of the world will thus be brought into sharp focus. The efficacies of the techniques employed and the methods pursued in such accomplishments can be studied and evaluated. The advisability of utilizing similar approaches in the solution of local problems may then be weighed, after a consideration of all relevant factors, by medical experts and public health authorities.

Filing of Certificates

The new forms of certificates, facsimiles of which are reproduced as part of this article, are to be used for the recording and certification of vital events occurring on and after 12:01 A. M., January 1, 1950. Needless to say, the filing pro-



MINNESOTA DEPARTMENT OF HEALTH
Division of Vital Statistics

CERTIFICATE OF STILLBIRTH

REGISTERED NO.

WRITE PLAINLY, WITH UNFADING BLACK INK
MARGIN RESERVED FOR BINDING

1. PLACE OF STILLBIRTH: STATE OF MINNESOTA
a. COUNTY
b. TOWNSHIP OR
c. CITY OR VILLAGE
e. LENGTH OF MOTHER'S STAY (in this district)
d. NAME OF (If not in hospital or institution, give street address or location) HOSPITAL OR INSTITUTION

2. USUAL RESIDENCE OF MOTHER (Where does mother live?)
a. STATE
b. COUNTY
c. TOWNSHIP OR
d. CITY OR VILLAGE
Is residence within its corporate limits? YES ☐ NO ☐
e. P. O. ADDRESS
ST.

3. CHILD'S NAME
(Type or Print)

4. SEX
5a. THIS BIRTH SINGLE ☐ TWIN ☐ TRIPLET ☐
5b. IF TWIN OR TRIPLET (This child born) 1ST ☐ 2ND ☐ 3RD ☐
6. DATE OF STILLBIRTH (Month) (Day) (Year)

7. FATHER'S NAME a. (First) b. (Middle) c. (Last)
8. COLOR OR RACE

9. AGE (At time of this birth) YEARS
10. BIRTHPLACE (State or foreign country)
11a. USUAL OCCUPATION
11b. KIND OF BUSINESS OR INDUSTRY

12. MOTHER'S MAIDEN NAME a. (First) b. (Middle) c. (Last)
13. COLOR OR RACE

14. AGE (At time of this birth) YEARS
15. BIRTHPLACE (State or foreign country)
16. CHILDREN PREVIOUSLY BORN TO THIS MOTHER (Do NOT include this child)
a. How many children are now living?
b. How many children were born alive but are now dead?
c. How many OTHER children were stillborn (born dead after 20 weeks pregnancy)?
17. INFORMANT'S OWN SIGNATURE

18a. LENGTH OF PREGNANCY WEEKS
18b. PREMATURITY YES ☐ NO ☐
18c. WEIGHT AT BIRTH LBS. OZS.
18d. CONGENITAL MALFORMATION YES ☐ NO ☐
19. LEGITIMATE Specify Yes or No

CAUSE OF STILLBIRTH
State only morbid conditions causing fetal death (do NOT use such terms as Stillbirth, Prematurity, Asphyxia, etc.)
20a. FETAL CAUSES
20b. MATERNAL CAUSES

21. STATE ANY COMPLICATIONS OF PREGNANCY AND LABOR
22. STATE ALL OPERATIONS FOR DELIVERY

I hereby certify that I attended the birth of this child who was born dead on the date stated above at_____M.
23a. ATTENDANT'S SIGNATURE (Specify if M.D., midwife, or other)
23b. DATE SIGNED
23c. ATTENDANT'S ADDRESS
If NOT attended by physician
24. SIGNATURE OF AUTHORIZED OFFICIAL TITLE

25a. BURIAL, CREMATION, REMOVAL (Specify)
25b. DATE
25c. NAME OF CEMETERY OR CREMATORY
25d. LOCATION (City, village or county) (State)

DATE FILED BY LOCAL REG.
REGISTRAR'S SIGNATURE
26. SIGNATURE OF FUNERAL DIRECTOR OR EMBALMER ADDRESS

STILLBIRTH—A stillbirth is a delivery of a fetus showing no evidence of life after complete birth (no action of heart, breathing, or movement of voluntary muscle), if the 20th week of gestation has been completed.

Signature of Sub-Registrar ..... 19 ...

Burial or removal permit issued .....

Figure 1.

cedures and fundamental registration requirements which are prescribed by the Uniform Vital Statistics Law in Minnesota are not otherwise changed by the adoption of these new certificate forms. The certificates will continue to be filed in the usual manner with the local registrar of vital statistics, who is the Town Clerk, the Village Clerk or the City Health Officer having jurisdiction of the locality where the birth, death or stillbirth occurred. The records of illegitimate live births must be transmitted by the physician directly to A. J. Chesley, M.D., State Registrar of Vital Statistics, State Office Building, St. Paul. However, this direct filing is not required in the case of the stillbirth of an illegitimate child. The stillbirth certificate in all cases will be filed with the local registrar of the district of occurrence.

Certificate of Stillbirth

Minnesota has been one of the few states which have never used a stillbirth record. A stillbirth is defined in the Uniform Vital Statistics Law as "a

MINNESOTA DEPARTMENT OF HEALTH
Division of Vital Statistics

CERTIFICATE OF LIVE BIRTH

WRITE PLAINLY, WITH UNFADING BLACK INK
MARGIN RESERVED FOR BINDING

BIRTH NO. REGISTERED NO.

1. PLACE OF BIRTH: STATE OF MINNESOTA
a. COUNTY
b. TOWNSHIP OR
c. CITY OR VILLAGE
d. NAME OF (If not in hospital or institution, give street address or location) HOSPITAL OR INSTITUTION

2. USUAL RESIDENCE OF MOTHER (Where does mother live?)
a. STATE b. COUNTY
c. TOWNSHIP OR
d. CITY OR VILLAGE Is residence within its corporate limits? YES ☐ NO ☐
e. P. O. ADDRESS ST.

3. CHILD'S NAME (Type or Print) a. (First) b. (Middle) c. (Last)

4. SEX | 5a. THIS BIRTH SINGLE ☐ TWIN ☐ TRIPLET ☐ | 5b IF TWIN OR TRIPLET (This child born) 1st ☐ 2nd ☐ 3rd ☐ | 6. DATE OF BIRTH (Month) (Day) (Year)

FATHER OF CHILD

7. FULL NAME a. (First) b. (Middle) c. (Last) | 8. COLOR OR RACE

9. AGE (At time of this birth) YEARS | 10. BIRTHPLACE (State or foreign country) | 11a. USUAL OCCUPATION | 11b. KIND OF BUSINESS OR INDUSTRY

MOTHER OF CHILD

12. FULL MAIDEN NAME a. (First) b. (Middle) c. (Last) | 13 COLOR OR RACE

14. AGE (At time of this birth) YEARS | 15. BIRTHPLACE (State or foreign country)

16. CHILDREN PREVIOUSLY BORN TO THIS MOTHER (Do NOT include this child)
a. How many OTHER children are now living? | b. How many OTHER children were born alive but are now dead? | c. How many children were stillborn (born dead after 20 weeks pregnancy)?

FOR HOSPITAL BIRTHS ONLY | 17. *I certify that this certificate is CORRECT.* (Signature of Parent)

I hereby certify that I attended the birth of this child who was born alive on the date stated above, at _____ M.

18a. SIGNATURE OF ATTENDANT
18b. ATTENDANT AT BIRTH M. D. ☐ Midwife ☐ OTHER (Specify)
18c. ADDRESS
18d. DATE SIGNED

19. DATE FILED BY LOCAL REG. | 20. REGISTRAR'S SIGNATURE

FOR MEDICAL AND HEALTH USE ONLY

(This section MUST be filled out by the Attendant)

22a. LENGTH OF PREGNANCY WEEKS | 22b. PREMATURITY YES ☐ NO ☐ | 23. WEIGHT AT BIRTH LBS. OZS. | 24. LEGITIMATE Specify Yes or No | 25. WAS 1% SILVER NITRATE USED TO PREVENT BLINDNESS? YES ☐ NO ☐ | 26. CONGENITAL MALFORMATION YES ☐ NO ☐

Figure 2.

birth after 20 weeks of gestation which is not a live birth." A more complete definition is given as a footnote on the certificate of stillbirth. It reads "A stillbirth is a delivery of a fetus showing no evidence of life after complete birth (no action of heart, breathing, or movement of voluntary muscle), after 20th week of gestation has been completed." For the reporting of stillbirths in Minnesota the practice has been to place on file both a birth and death certificate. This procedure will be discontinued on January 1, 1950. A single stillbirth form will thereafter serve the purpose. It will be treated for practical purposes as a death certificate. It will not bear a birth number. The information to be entered on this form is largely that which is called for in the usual birth and death record of such cases. The cause of stillbirth is to be specified in a manner which does not differ greatly from the present method of medical certification of death.

While the item calling for an indication of the length of the infant has been dropped from the record because it has not been considered a satisfactory measurement, there has been restored to the birth certificate forms a provision for a "Yes" or "No" response as to the presence of congenital malformation.

It is emphasized that premature birth is the principal problem in the causes of infant deaths. In 1948, with 716 deaths attributed to premature

MINNESOTA DEPARTMENT OF HEALTH
Division of Vital Statistics

CERTIFICATE OF DEATH

REGISTERED NO.

WRITE PLAINLY, WITH UNFADING BLACK INK
MARGIN RESERVED FOR BINDING

1. PLACE OF DEATH: STATE OF MINNESOTA
a. COUNTY
b. TOWNSHIP OR
c. CITY OR VILLAGE
d. NAME OF (If not in hospital or institution, give street address or location) HOSPITAL OR INSTITUTION
e. LENGTH OF STAY (in this district)

2. USUAL RESIDENCE (Where deceased lived. If institution: residence before admission.)
a. STATE
b. COUNTY
c. TOWNSHIP OR
d. CITY OR VILLAGE — Is residence within its corporate limits? YES ☐ NO ☐
e. P. O. ADDRESS — ST.

3. NAME OF DECEASED (Type or Print) a. (First) b. (Middle) c. (Last)
4. DATE OF DEATH (Month) (Day) (Year)
5. SEX
6. COLOR OR RACE
7. MARRIED NEVER MARRIED, WIDOWED DIVORCED (Specify)
8. DATE OF BIRTH
9. AGE (In years last birthday) — If Under 1 Year: Months | Days
10a. USUAL OCCUPATION (Give kind of work done during most of working life, even if retired)
10b. KIND OF BUSINESS OR INDUSTRY
11. BIRTHPLACE (State or foreign country)
12. CITIZEN OF WHAT COUNTRY?
13. FATHER'S NAME
14 MOTHER'S MAIDEN NAME
15. WAS DECEASED EVER IN U.S. ARMED FORCES? (Yes, no, or unknown) (If yes, give war or dates of service)
16. SOCIAL SECURITY NO.
17. INFORMANT'S OWN SIGNATURE — ADDRESS

MEDICAL CERTIFICATION

18. Enter only one cause on lines (a), (b) and (c).
(Give disease, injury or complication which was the IMMEDIATE CAUSE of death, not mode of dying, as heart failure, asphyxia, etc.
I. DISEASE OR CONDITION LEADING DIRECTLY TO DEATH* (a)
ANTECEDENT CAUSES
Morbid conditions, if any, giving rise to the above cause (a) stating the underlying cause last.
DUE TO (b)
DUE TO (c)
2. OTHER SIGNIFICANT CONDITIONS *Contributing to death but not related to disease or condition causing death.*
TIME BETWEEN ONSET & DEATH

19a. DATE OF OPERATION
19b. MAJOR FINDINGS OF OPERATION
20. AUTOPSY? YES ☐ NO ☐
21a. ACCIDENT SUICIDE HOMICIDE (Specify)
21b. PLACE OF INJURY (e.g., in or about home, farm, factory, street, office bldg., etc.)
21c. (CITY, VILLAGE OR TOWNSHIP) (COUNTY) (STATE)
21d. TIME OF INJURY (Month) (Day) (Year) (Hour) m.
21e. INJURY OCCURRED While at Work ☐ Not While At Work ☐
21f. HOW DID INJURY OCCUR?

22. *I hereby certify that I attended the deceased from_____, 19____, to_____, 19____, that I last saw the deceased alive on_____, 19____, and that death occurred at_____M., from the causes and on the date stated above.*

23a. SIGNATURE (Degree or title)
23b. ADDRESS
23c. DATE SIGNED
24a. BURIAL, CREMATION, REMOVAL (Specify)
24b. DATE
24c. NAME OF CEMETERY OR CREMATORY
24d. LOCATION (City, village or county) (State)
DATE FILED BY LOCAL REG.
REGISTRAR'S SIGNATURE
25. SIGNATURE OF FUNERAL DIRECTOR OR EMBALMER
ADDRESS

Signature of Sub-Registrar
Burial or removal permit issued_____, 19____

Figure 3.

N.B. Since this cut was prepared, items 13 and 14 have been renumbered 13a and 13b, respectively, and a new item has been added, to read—14. Spouse's name.

birth out of a total of 27,240 from all causes, it was the eighth leading cause of death in Minnesota. The only means available for the determination of the nature and extent of this problem is through the securing of data on the birth records of the weight and weeks of gestation.

Certificate of Live Birth

A confidential portion of the Certificate of Live Birth, which is designated for "Medical and Health Use Only," will contain these items, numbered as they appear on the form: (22a) length of pregnancy (in weeks); (22b) prematurity; (23) weight at birth; (24) legitimacy status; (25) use of 1 per cent silver nitrate; and (26) congenital malformation. All but item (25) are also a part of the Certificate of Stillbirth. These six items will not be photostated or copied in the preparation of the official certificate of a record of live birth.

The items of "length of pregnancy (in weeks)," "prematurity," and "weight at birth" should per-

haps be explained. Full-term pregnancy varies from 220 to 330 days, with 270 days the average length. This is the equivalent of nine calendar months of thirty days each or approximately ten lunar months of twenty-eight days, computed on the basis of Naegele's rule, from the date of onset of last menstrual period to delivery. Hence, a full-term pregnancy is not thirty-six weeks, but actually forty weeks, and the latter figure is to be used to describe the length of the pregnancy in the normal case.

Prematurity ends at the beginning of the twenty-eighth week of gestation (period of viability) to the close of the thirty-seventh week. In any case, the infant must be born more than two weeks before term computed on the basis of forty weeks for term. The Committee on Fetus and Newborn of the American Academy of Pediatrics defines a premature infant as one whose weight at birth is 2500 grams (5 pounds 8 ounces) or less.

Provision has been made for the insertion by the Clerk of the District Court of the birth number which will appear in the upper left-hand corner of the form.

Certificate of Death

The new certificate of death generally contains little that was not required for identification and statistical purposes in the former certificate. It will no longer be necessary to compute, in terms of months or days, the age of a decedent who was more than one year old at his death. It will suffice if his age in years at his last birthday is stated.

Medical Certification

The medical certification portion of the certificate of death is vastly changed. The International Committee, which prepared the Sixth Decennial Revision of the International Classification of the Causes of Death, and the expert committee, which planned the uniform death certificate, have arranged the uniform medical certification in such a way as to facilitate the entry of the causes of death in reverse sequential order leading back to the underlying cause. The emphasis is on the primary underlying cause of death. Some difficulty has been experienced in the past in securing a clear designation of what constitutes the underlying cause of the death.

With each revision of the death certificate, attempts, not too successful, have been made to guide the physician in setting down the cause of death in such a way that Nosologists and Death Editors would be able to recognize readily the primary underlying cause and thus choose it for statistical tabulation in preference to any of its sequelae which might be shown. On the other hand, when two or more independent causes appeared together, selection of the one to be tabulated for statistical purposes was made by means of rigid tables constructed by International Experts on the basis of a vast body of clinical experience. General rules followed in setting up these tables were that rare, very severe, and infectious diseases; accidents, suicides, homicides, and conditions for which surgery was done were given precedence over other causes certified, and considered the main cause of death for statistical tabulation.

Beginning with 1950, these rigid tables, which have given valuable service in spite of their shortcomings, will be discarded and the responsibility will then be placed upon the attending physician to show by the manner in which he certifies the cause of death, the underlying condition which in his considered judgment caused death. The standard definitions of Cause of Death and Underlying Cause of Death are as follows:

"Cause of Death: A morbid condition or disease process, abnormality, injury, or poisoning leading directly, or indirectly, to death. Symptoms or modes of dying, such as Heart Failure, Asthenia, etc., are not considered to be causes of death for statistical purposes.†

"Underlying Cause of Death: The disease or injury which initiated the train of morbid events leading *directly* to death or (b) the circumstances of the accident or violence which produced the fatal injury."†

By International agreement, the Underlying Cause in the sequence of events resulting in death is to be the one chosen for statistical tabulation, and beginning with 1950 the physician is to report that underlying cause in Part I of the Revised Medical Certification, which consists of two separate parts. As an aid in showing a clear picture of the events which preceded the main or underlying cause, he should enter in Part 1(a) of the certificate, the Direct Cause, which, for discussion, we will call a Massive Broncho-pneumonia. Lacking any intermediate cause, which the physician might feel would make the picture clearer, he could place the Underlying Cause itself, which

†*Vital Statistics Instruction Manual*, Public Health Service, National Office of Vital Statistics, 1949.

we will say is Carcinoma of the Breast, in 1(b). Or, should Metastasis have developed, he would report in Part I the entire sequence of events in their reverse order, giving the Direct Cause first and leading back to the Underlying Cause, which he would state last in 1(c).

In Part 2 of the certificate, he would state any other cause which in his opinion contributed to the death but was not related to the Underlying Cause, the overwhelming and precipitating factor in the termination of life. Suppose this patient had also a Mitral Insufficiency. Then the Medical Certification would read as follows:

1 (a).	Massive Broncho-pneumonia
Due to (b)	Generalized Carcinomatosis
Due to (c)	Carcinoma of the Breast
2.	Mitral Insufficiency (Rheumatic)

It would be perfectly clear to the person editing this certificate prior to classifying it that the cause of death in the doctor's opinion, the Underlying Cause, was Carcinoma of the Breast.

Another example: A Diabetic patient sustains a fracture in an automobile accident. Subsequently and in a relatively short time, he dies. The post mortem reveals a Coronary Occlusion with Coronary Sclerosis, based on Diabetes. In considering this case, the physician concludes that the fracture was not the Underlying Cause of Death, because the Direct Cause was the Coronary Occlusion and its Underlying Cause Diabetes. Consequently, he would certify the cause of death as:

1 (a).	Coronary Occlusion
Due to (b)	Coronary Sclerosis
Due to (c)	Diabetes
2.	Fracture of the hip

In Item 21 of the Death Certificate, he would further give the required additional information relative to the means of the fracture.

This cause of death would be classified Diabetes, because the physician clearly demonstrated in the way he certified the Cause of Death that the Underlying Cause was Diabetes.

It is important for physicians to know that they and not Death Editors with the State Board of Health are to decide which one of the causes, among multiple causes, brought about death; which was the Underlying Cause, the main or major cause, giving rise to the Direct Cause, which finally took the individual out of his misery. Only in so far as the physician realizes his responsibility and meets it will the mortality statistics in Minnesota adequately serve the purpose for which they are needed. They are essential to and being used daily by those engaged in research in Cancer, Heart Disease, Rheumatic Fever, and all other diseases and accidents which deprive mankind of a full life span.

When the physician fails to certify the Cause of Death as is contemplated by the Revised Death Certificate, Editors will be forced to apply a complex body of rules to select the cause for assignment. When this happens, the principles upon which the Revised Certificate and the Sixth Revision of the International List of Causes of Death are based will be defeated. It is agreed that in many cases an exact and true Cause of Death cannot be arrived at because it will not be known. Nevertheless, the objective of the State Board of Health is to deal as intelligently as possible with such information as is available. There is little doubt that the mortality statistics of Minnesota are of excellent calibre because of the high standards of the medical profession in this State and the splendid co-operation which the Board always receives from them.

HUMPHREY HAS CHANGE OF MIND

On the same day that the editorial mailing was made, newspapers carried stories about Senator Humphrey's announcement that he did not expect any congressional action on the administration's health bill next year. The Minnesota Democrat thus lined up with two other sponsors of the measure—Thomas of Utah and Murray of Montana—who look for it to stay on the shelf through 1950. Humphrey said that until the "practical difficulties" of administering the hotly disputed plan have been met, "legislative action might well be a disservice to the principle in which we believe."

All this comes at a time when the British Socialists, who once boasted that there would be no cuts in the "free medical treatment" experiment, are beginning to back water.

Now, if a Briton wants a box of aspirin, a package of laxative or a wisp of cotton he has to pay for it. Under the modification patients will have to pay up to a shilling (14 cents) each for medicines they used to get free. The government thus expects to save $28,000,000 a year. As one *Chicago Dainly News* writer said: "It used to be only critics of the Socialists who said that one reason for the high cost of socialized medicine was that the public was abusing it. Now the Socialists themselves admit it."—AMA Secretary's Letter, Novem-7, 1949.

FLEXOR TENDON INJURIES OF THE HAND

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STERLING Bunnell[8] has stated that "next to the brain, the hand is the greatest asset to man and to it is due the development of man's handiwork." Although it is now unusual to have a man attempt an operation on the brain without a special knowledge of its anatomy, physiology, pathology and of the accepted technique, there are still too many men who will attempt to operate on the hand without a similar knowledge and who still relegate this task to the office or the emergency room as a minor surgical procedure.

Lacerations of the hands are the most common injuries encountered by doctors. They are the most frequent household injuries and the most common industrial injuries. The greater number of lacerations of the hand are not serious and can be repaired as a minor surgical procedure. Despite this fact, one should not minimize his respect for hand lacerations. The more serious ones, involving the functioning mechanism of the fingers, must be recognized at the time of the injury in order that the proper treatment may be started with the first-aid care and the first surgical procedure.

The most common lacerations of the hand are those on the palmar surface. It is here that the complicated and delicate mechanism of the hand and fingers is vulnerable to injury. It is here where the poor results of tendon repairs are seen. Better results could be obtained by the proper recognition and handling of these injuries. The disabled hand, from flexor tendon injuries, is still far too common, and it is the purpose of this paper, by discussing the handling of these injuries, to attempt to reduce these disabilities and create a respect for such injuries and their surgical repair.

Sumner L. Koch[12] has said "Surgery of divided tendons differs from other types of reparative surgery in one important respect. Not only must the sutured tissue heal so firmly that the line of union can withstand the tension that is put on it as muscles contract, but the line of union must be so smooth that there is no interference with free gliding movement essential for normal function." This is a very important point, that healing of this tissue must be strong, yet without excess or adhering scar. It is the prevention of this scar which provides the difference between a good or a poor functional result. Many factors influence the degree and extent of scar formation from the time of injury to the resumption of use of the hand. Most of these factors may be controlled by those caring for the injuries, beginning with the first-aid treatment, through the definitive surgical repair, and ending with the after-care.

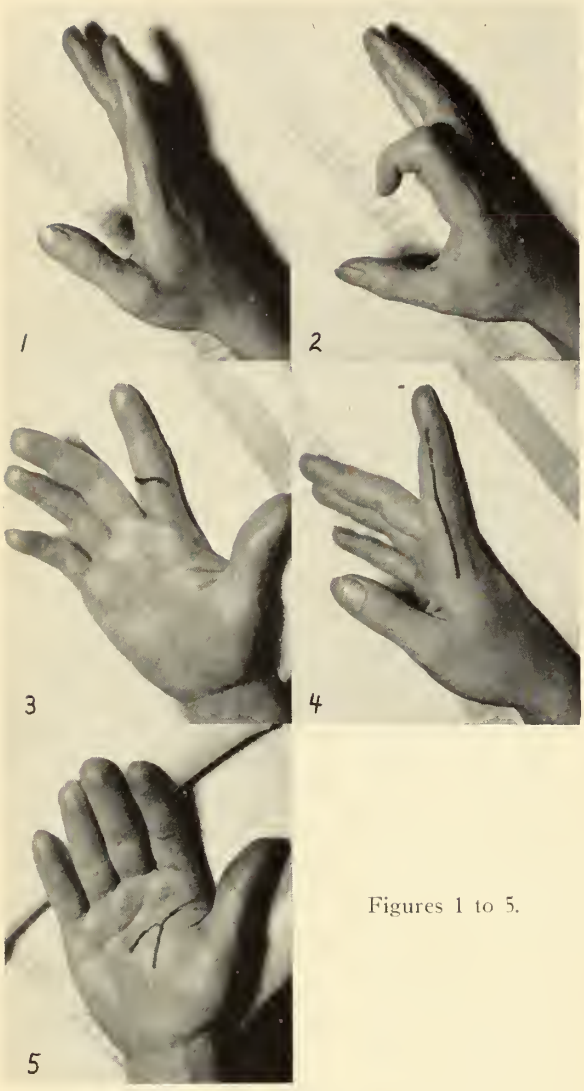
Nature of the Wound

The first factor influencing scar formation is the nature of the wound. The more traumatizing the wound, the greater the tissue reaction in healing and the greater the extent of scar.

Although this factor cannot be controlled, a certain amount of benefit can be provided through the judgment of the surgeon. He must decide which procedure will result in a more successfully functioning tendon: a primary tendon repair, or a debridement with simple closure of the wound and a secondary tendon repair at a later date. The surgeon, in contemplating a primary tendon repair, must consider whether the additional surgical trauma, the time element involved in a complete repair, and the exudative reaction at the site of the approximated tendon ends may not cause an unfavorable degree of tissue reaction which may offset the value of such a procedure. The surgeon must consider in the secondary repair a shorter time element, less surgical trauma and a minimum of healing reaction at the approximated tendon ends, so that the healing might result in less scar formation and adhesions.

This is especially true when the laceration involves the tendon sheaths where normally there is little space for the gliding tendon. Here very little added swelling will make the enclosed tendon fit too snugly against the tunnel wall and underlying bone. Such snug fitting might result in an interfered blood supply and congestion and add to the likelihood of a final adherence of the tendon to its sheath. Because of this snug-

Inaugural paper presented before the Minneapolis Surgical Society, May 5, 1949.



Figures 1 to 5.

ness within the tunnel sheaths, it is now recommended by most surgeons that a repair of the tendons within these tunnels be confined to the profundus tendon, and that the sublimis tendon be removed at the wrist.

At the Roosevelt hospital in New York, flexor tendons severed beyond the distal flexor crease of the hand are repaired by secondary operation. Their results have been very gratifying.

Figures 1 and 2 represent the result of a severed profundus tendon repaired seven weeks after the initial injury. Healing had taken place by primary intention with only a minimum of scar resulting. Figure 3 shows the laceration. At operation the proximal end of the profundus tendon was found in the palm of the hand. It was coiled under itself and was drawn down easily. A mid-lateral incision was used on the finger (Fig. 4). Incisions in the flexor creases of the palm raised a flap, baring the underlying structures (Fig. 5). The annular ligaments were opened along their lateral margins close to the bone. Bunnell's[2] technique of end to end suture at a distance, with No. 34 stainless steel wire for the proximal tension suture with a pull-out wire, and blood-vessel silk for approximating the tendon ends, was used. The tunnels or annular ligaments were closed with mattress wire sutures brought out through the skin on the dorsolateral aspect of the finger and tied over small buttons.

Tendons in the palm of the hand have more leeway in the amount of scarring which will bind and adhere them, limiting their movement or excursion. Here primary repair of the tendon may be attempted in lacerations or injuries with a greater degree of trauma than those involving the tunnels or sheaths.

Figures 6 and 7 represent such a repair of the long flexor tendon of the thumb lacerated in the thenar eminence by a porcelain water faucet handle. Figure 8 shows the laceration. Repair was done by fine silk suture with relief of tension by flexion of the wrist and thumb at the metacarpophalangeal joint. Figure 9 shows the extension of the operative incision from the laceration.

Influence of Infection

The second factor influencing the amount of scar formation is the presence or absence of infection during the healing. This may vary from the minimal scar in healing by primary intention to the extensive and dense scar which results from actual suppurative infections or gangrenous hemolytic infections. Between these extremes are the various milder forms of infection or inflammatory reaction with or without drainage. These are the result of bacterial contamination. Each produces a degree of scarring in proportion to the infection and the length of time required for that infection to subside. Infection in either the primary tendon repair or simple closure greatly reduces the chance of a successfully functioning tendon.

First Aid

Infection can be minimized considerably, but in order to do so the co-operation of many people is needed. Proper first-aid care of the injured

hand and fingers should be taught and publicized in factories, schools, Red Cross organizations, boy scout activities and first-aid agencies.

Whenever possible, thick sterile dressings should be applied to the wound and hand. The injured hand should be wrapped or bandaged snugly but not tightly. The dressings should be abundant to prevent soaking through of the blood. If sterile dressings are not available, then as clean dressings as possible should be used—never a used handkerchief. If an antiseptic is available, it should be applied to the hand about the laceration but not into it. Iodine should never be used. A tourniquet is never necessary for lacerations of the hand or fingers, and frequently its use is harmful.

Duties of the Hospital Staff

The next persons involved in the prevention of infection are the interns and nurses in the emergency rooms at hospitals, the nurse in the office, or the doctor first receiving the patient.

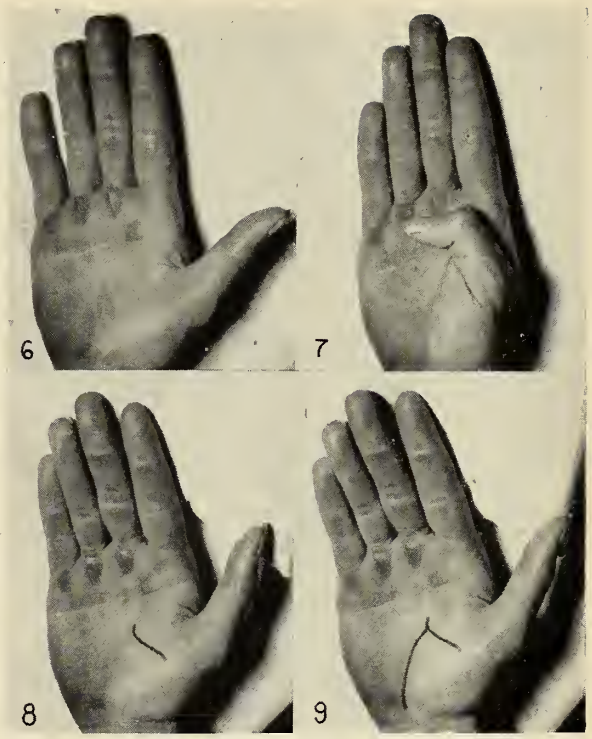
A careful history of the extent and the direction of the wound, the type of cutting instrument, the areas of fingers involved and the patient's ability to move his fingers can usually determine whether or not tendons have been involved.

If it is determined that tendons are involved or if there is any suspicion of involvement, the original dressing should not be disturbed until the hand is ready for definitive surgical treatment. If x-ray films are thought advisable, they should be taken through the original dressing.

If inspection of the wound is absolutely necessary, it should be done under proper aseptic technique. A mask should be worn by those who make the inspection. Sterile gloves and sterile instruments should be used. Unnecessary sponging or rubbing of the wound should be avoided. Sponges should not be held in unsterile fingers. Probing of the wound for tendon ends is no more justifiable in a hand injury than it is in the peritoneal cavity without proper asepsis.

Duties of the Surgeon

The surgeon must also play his role in the prevention of infection. These injuries are emergencies of the first order. No delay of hours to a convenient time or the next morning is permissible. The greater the length of time between the injury and the operative repair, the greater the likelihood of infection from the growth of



Figures 6 to 9.

the contaminating bacteria in the wound. The importance of this time element is emphasized in the recommendation of M. L. Mason[16] as well as other surgeons. He indicates that severed flexor tendons, in the fingers more than two hours old and in the palm more than four hours old, should not be repaired primarily. The more prolonged the contamination, the greater the degree of inflammatory reaction.

The next important duty of the surgeon in preventing infection is the preparation of the hand for repair or closure. This means the conversion of a dirty, contaminated and traumatized laceration into a surgically clean wound, in which the chance of healing by primary intention is greatest.

The cleansing and preparation of the hand should be done by the surgeon or a capable assistant. It should be done under general anesthesia. A pneumatic tourniquet should be used to control the bleeding. The cleansing should be done with a mild soap and an abundance of water. Brushes should not be used. The removal of the dirt should be dependent upon the emulsifying action of soap and the washing effect of water, rather than upon the effect of scrubbing or rubbing. This may consume a considerable period

of time. Twenty, twenty-five or thirty minutes may be required. Ether may be used to remove grease or oil. A detergent antiseptic may be used.

Following such cleansing, the hand and wound should be irrigated copiously with normal saline. The hand, all fingers and the forearm are then prepared with an antiseptic, meticulously avoiding the introduction of antiseptic into the wound.

A thorough but careful debridement of the wound is then done. All contaminated and devitalized tissue should be carefully removed by sharp dissection. All viable tissue should be saved. Extreme care should be taken to preserve other vital structures such as nerves, blood vessels, tendon sheaths and other tendons. Frequently these are difficult to recognize in a bloodless hand, especially the nerves and vascular branches. Severed nerves should be identified for repair.

This work cannot be done fast, and there are no short cuts. Even the surgeon with a thorough knowledge of the anatomy of the hand must proceed carefully. Many tedious hours may be spent by the surgeon who is striving for good results in his flexor tendon surgery.

Operative Technique

A third factor which may influence the formation of scar tissue in the treatment of tendon injuries is the operative technique. As stated before, the greater the trauma, the more extensive and the more severe the scarring in healing. Therefore a minimum of operative trauma should be added to the original accidental trauma.

"Atraumatic technique," a term used by Bunnell, implies the most delicate handling of the tissues. In order to attain this end, it is suggested that three fundamental principles be applied. First, the operative procedure should be carried out in a bloodless field by use of a pneumatic tourniquet. In order to accomplish this, a general anesthetic may be required, and if such is the case, gastric lavage may be indicated in order to proceed with the operation without delay. A bloodless field eliminates the frequent sponging and wiping of the tissues which, although slight, adds a traumatic factor to the wound. It shortens the operative time by permitting clearer observation and identification of the structures.

It is my practice never to leave the tourniquet on longer than ninety minutes without a release. It is then released for three minutes, following which the hand is elevated and the tourniquet reapplied. The bloody wound is irrigated with normal saline to remove the clots and blood rather than being wiped or sponged out.

Following the completion of the tendon repair, the tourniquet is again released and the gross bleeding points clamped and ligated with fine silk. The wound is again irrigated and the tourniquet reapplied.

The tourniquet is not released finally until the closure has been made and a copious pressure dressing applied to the hand. The pressure dressing is applied so as to minimize the amount of oozing which otherwise would result in a collection of blood with its subsequent organization and undesirable fibrous tissue formation. Residual blood in the field of operation also provides a nutrient field for any remaining contaminant bacteria.

The use of general anesthesia demands that the surgeon have an accurate knowledge of the anatomy of the hand as he cannot be dependent upon the active movement of the tendons to identify them. If the surgeon does not possess this knowledge, he should not be attempting the repair of such injuries. More damage is done by the inexpert or inaccurate repairs of tendon injuries than by the simple closure of the wound with no attempt at repair of the tendons. An improperly repaired tendon with its scarring and adhesions usually presents a far greater problem for secondary repair than the tendon on which no attempt at repair has been made. Also, it may be mentioned here that the anchoring of a proximal tendon end for later repair is a procedure to be condemned. It is far better to prevent retraction by limiting the active use of the tendon by splinting and to keep the joints flexible by passive movements.

Operative Incision

The second principle to be applied in atraumatic technique concerns the operative incision. The operative repair should be done under adequate exposure in order to eliminate unnecessary probing for tendon ends. Much less trauma is produced by wide exposure along proper lines of incision and with sharp dissection than by attempting a repair through the original wound or through a small improperly placed incision.

In locating the distal end of a severed tendon it is better to extend the incision and open the

tendon sheath rather than probe for it through the sheath.

In the palm of the hand, large flaps of skin and subcutaneous tissue may be laid back in order to expose the underlying tendons adequately. There will be less formation of adhesions in doing this than when the incision is made directly over the injured tendon, as the scar of the incision lies well away from the repaired tendon. Care should be taken that the adequate blood supply comes through the base of the flaps when the lacerations of the trauma intersect them or complicate them.

Incisions should not cross the flexor creases of the fingers or hand. Mid-line incisions should not be made. Incisions of the fingers should be along the mid-lateral aspect. This position may be found by flexing the finger and placing a dot at the dorsal end of the flexion creases. On straightening the finger an incision passing through the dots will properly locate the incision (Figs. 10 and 11). This incision runs parallel with the digital nerves and vessels and lies midway between the dorsal and palmar branches. Tendon sheaths or annular ligaments should be opened along their lateral aspects close to the bone. A palmar incision should parallel the flexion crease of the hand or the opponens crease of the thumb. My preference is to make the incision directly in these creases (Figs. 5 and 9). The lacerations of the trauma may be extended along the above-mentioned lines or may be left alone and the exposure obtained through new incisions entirely. Finger flaps may be made with incisions across the flexor creases connected with the mid-lateral incisions.



Figures 10 and 11.

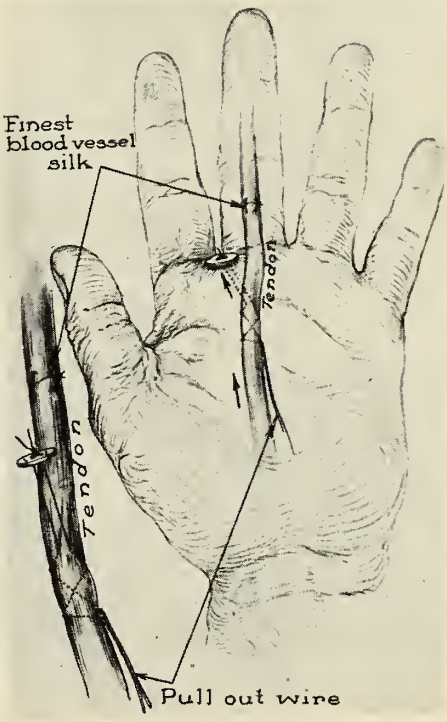


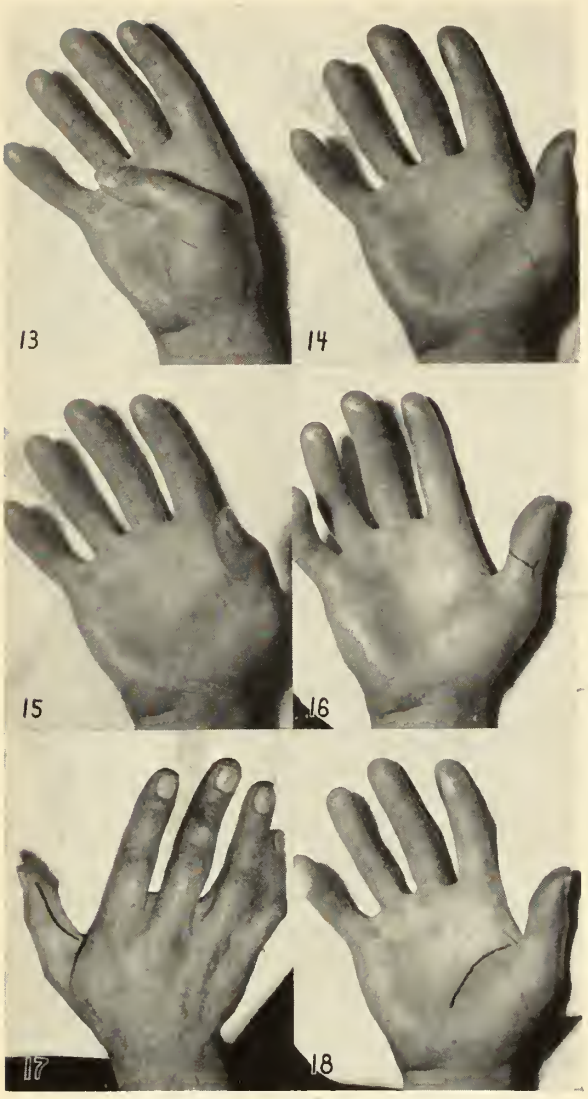
Figure 12.

Proper Choice of Instruments

The third principle involves the instrument and material used in the repair. The instruments used in these procedures should fit the operation at hand. They should be small, delicate and atraumatic. Mosquito forceps should be used for clamping. Delicate small tissue forceps, small fine pointed curved scissors with sharp, good cutting blades, small blunt or rake retractors and small sharp scalpel blades which are changed frequently should be used.

Fine silk, 4° to 6° is used for vessel ligatures. For the tendon repairs themselves I prefer the technique of Bunnell[5] in the use of fine stainless steel wire with pull-out wires. Fine silk, size 6°, is used, especially in primary repairs in the palm or thenar eminence, although here, also, the wire technique may be used.

Each case with its individual problems dictates the suture or technique used. In tendon repairs within a tunnel, either primary or secondary, I prefer the "suture at a distance" technique of Bunnell[2] with wire tension sutures and pull-out wire and the approximation of the tendon ends with one or two blood-vessel silk, right angle sutures (Fig. 12). Threading of the distal tendon over the wire suture and bringing the wire out through the end of the finger over a button works out well in repair of deep flexor tendons



Figures 13 to 18.

cut quite distally. Figures 13, 14 and 15 show a secondary repair of the long flexor tendon of the thumb, using this technique in a case in which a primary repair had been attempted seven and a half weeks previously and which had separated due to improper immobilization. Figure 16 shows the original laceration, and Figures 17 and 18, the secondary operative incisions. Short tendon grafts may be threaded over the wires. Long tendon grafts may be threaded through intact tunnels to the finger end and approximated to the proximal end by only blood-vessel silk, while the proximal end of the tendon is held distally under tension with a wire suture brought out in the palm. The use of wire which can be removed reduces foreign body reaction to a minimum. Stainless steel wire itself produces a minimum of foreign body reaction, and after its removal only one or two very fine blood-vessel silk sutures remain as a foreign body. Usually a size 34 wire will suffice for finger tendons with a slightly larger wire used for the pull-out wire. Also, through-and-through mattress wire sutures tied over buttons are used for the closure of the tendon tunnels along the finger. The skin is closed with interrupted fine silk.

Postoperative Care

The final factor influencing the amount of scar formation is the postoperative care given. The excellent work of M. L. Mason and H. S. Allen[18] on the rate of healing of tendons has taught us much and guided our course in the after-care of repaired tendons. They have shown that, in the healing of the tendons, three tissues are involved, namely, the tendon itself, the connective tissue in and on the surface of the tendon, and the connective tissue surrounding the tendon. They have further shown that the healing processes pass through stages of tissue reaction and regeneration and three phases of varying tensile strength of the tendon. Tendon healing begins in the connective tissue in and about the tendon with proliferation of fibroblasts to form a cuff between and around the tendon ends. During this exudative phase there is an actual enlargement at the approximated tendon ends due to swelling and exudative reaction. Such enlargement must be taken into consideration during the early postoperative period in view of the fact that such swelling produces a tight fit of the tendon within its sheath. The stage of exudation and fibrous tissue proliferation lasts until the fourteenth to sixteenth day. It is during this stage that the tensile strength at the point of union is the weakest and therefore separation can occur most readily.

Mason and Allen found that there is a rapid diminution of the tensile strength at the point of union, reaching its maximum on the fifth postoperative day. Thereafter there is a gradual increase in the tensile strength up to the sixteenth day as fibrinous union takes place. The holding power of the tendon does not rise above the strength of the sutures until the fourteenth day. The suture strength itself, although carrying most of the tension during this period, is weaker than the immediate suture until after the fourteenth day.

The next stage of healing is one of regeneration and conversion into tendon-like tissue. This is a stage of maturation and differentiation, where the cells appear very similar to tendon cells although distinguishable. This stage begins about the fourteenth day. The swelling begins to subside and the connective tissue elements loosen and allow movement. It is during this period that increase of the tensile strength of the tendon levels off into a plateau until about the nineteenth day, when it again passes into a third phase of increasing tensile strength.

In the third phase, between the nineteenth and twenty-fist day, the maturation of the healing occurs.

The work of Mason and Allen also showed that function of the tendon after the fourteenth day will increase rapidly the tensile strength but will also increase the tissue reaction about the tendon. Function or motion during the first fourteen days has no effect on increasing the tensile strength although it does increase the tissue reaction and may lead to separation at the suture line. After the nineteenth and twenty-first days, function further increases tensile strength with less reaction, although some reaction still takes place and stretching of the suture line may occur.

Thus, the work of these men has pointed out that to gain the strongest healed tendon with the least amount of adherent scar, complete immobilization of the healing tendon is required for a minimum of three weeks. This is accomplished by applying a posterior plaster splint to the forearm, wrist and hand onto the proximal phalanges of the fingers, with the wrist slightly palmar flexed to relax the flexor tendons and the fingers slightly flexed in the position of function. The hand is dressed with an abundant pressure dressing with the fingers flexed in function over the dressing. The splint is applied on the dorsum of the arm and is held in place with elastic bandages. The hand and forearm then are well elevated on three pillows postoperatively to reduce the congestion as much as possible, which in itself is another factor in the amount of scarring and fibrosis which will develop. Skin sutures are removed at the end of a week. The splint is removed at the end of three weeks and hot soaks of the hand begun with guarded active movements. The splint is reapplied at night. At the end of four weeks, active physical therapy is begun with whirlpool, massage, active and passive movements and muscle training. Improvement and progress may take place well over a year. Penicillin and sulfa drugs are used postoperatively for five days to a week but reliance on them to overcome the improper handling of the injury is never justified.

Conclusions

The success of flexor tendon repairs is dependent upon the firm healing of the specialized tissue with the minimum amount of scarring or adherence to surrounding tissue.

Many factors are involved in attaining the above desired healing from time of injury to the final functional use.

The majority of these factors is definitely under the control of the people caring for these injuries. The proper control of these factors has been discussed with the underlying principals.

A plea has been made for the proper handling of such injuries to prevent the permanent crippling and disabling of man's second greatest asset, his hands.

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MEDICAL CARE PROBLEMS OF THE AGED

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MEDICAL and hospital care for the aged is not only a state and local problem, but a national one. Three salient facts should be borne in mind in any consideration of this matter. First, the number of aged persons in our population is steadily and greatly increasing. Second, aged persons are subject to more physical hazards and illnesses than younger ones. And, finally, our present hospital system is adapted principally to care of acute, emergency illness, making beds for the aged or chronically ill unavailable and excessively costly.

In the United States in 1948, there were 10,000,000 persons sixty-five years of age or older. Boas has estimated that by 1980 there will be 22,000,000 such persons in this country. At present there are about 250,000 persons sixty-five years of age or older in Minnesota. Of these, about 60,000 are Old Age Assistance recipients. Also, it is known that the number is steadily increasing, and the case load of Old Age Assistance is likely to increase gradually. This increasing load is sure to raise the total medical cost as well as other costs of the program.

Besides the increasing case load, persons over sixty-five years of age are subject to more illness and different diseases than those of younger age. Problems of medical care of this population group are evident in the very types of disease with which the aged are afflicted. Principally, they are of three types: infectious, degenerative, and neoplastic or cancerous. And immediately you ask, "How does this influence medical care costs?"

Infectious diseases of the aged most often involve the lungs as pneumonia or the genito-urinary tract as kidney or bladder infections. Two drugs, the "sulfas" and penicillin are effective against most infections. Notoriously, however, aged persons have less resistance to infection and their bodies are less resilient, which means their return to normal is more prolonged. Lessened resistance means larger doses of drugs. This increases cost. Low resilience means more prolonged attendance and hospitalization. Beyond these two factors is another, the greater frequency of complications of such diseases in the aged. All of these factors are responsible for an unavoidably high cost of medical care for this group.

Degenerative diseases involve any tissues or organs in the body, but the heart and blood vessels are the tissues most often involved. Thus, high blood pressure, heart failure, hardening of the arteries, apoplexy and coronary heart disease often require medical care in this group of people. Such other diseases as arthritis, hip fractures, kidney disorders, diabetes and psychiatric problems often demand medical care in persons over sixty-five years of age. All of these afflictions are expressions of wear and tear of different organs of the body. Each of them is a chronic, incurable ailment requiring varying amounts of medical care over a prolonged period of time. So again, with this group of diseases, factors are operative which make medical care costs beyond the control of anyone.

And, finally, is that group known as neoplastic which includes various types of tumors and cancer. Treatment falls into two classes, palliative and curative. Palliative measures at times are both frequent and heroic, and at other times infrequent but prolonged—in either event, expensive. Curative treatment is principally radium, x-ray or surgery. All of these forms of treatment involve hospitalization and are costly.

Thus, then, the very nature of the diseases and the constitutional characteristics of the aged tend to increase the cost of their medical care. It is not possible for the attending doctor nor for the social worker to control or influence such expense. Such a statement is based upon the assumption that Old Age Assistance recipients are entitled to the same care as others even though government has assumed responsibility financially.

Medical Care Problems of the Doctor

With these basic factors understood by all, the question arises, "What, then, are the immediate problems as the doctor attends these patients?" With the exception of the customary minor illnesses and regulatory regimes that can be managed in the doctor's office, proper diagnosis and treatment requires hospitalization. This is due to various evolutionary changes in medical practice. Up-to-date diagnostic procedures and treatment

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methods are not possible in the home. Notable also is the fact that in present times relatives and neighbors are not available to assist with care in the home. Neither practical nor registered nurses can be secured for home treatment. And even of greater moment is the general desire of people now to be hospitalized when ill. Thus, then, hospitalization is the first problem for the doctor when called upon to treat the aged for anything but minor illnesses.

Clearly, it appears that the answer is, "Well, hospitalize the patient and be done with it." It is not that simple. Just an example, consider St. Gabriel's Hospital in Little Falls. It serves all of the doctors and most of the patients of Morrison County. On several occasions during the past winter it had an unusually high census of elderly patients with cancer, heart disease, threatened gangrene, fractured hips, diabetes and other chronic disorders. Prolonged hospitalization of these patients meant that case after case of acute illness in younger persons had to be cared for in the home. Actually, the hospital superintendent had to refuse admittance to a three-year-old patient with pneumonia. She was treated in the home with injections of penicillin. Two days later her seven-year-old sister required penicillin treatment of pneumonia at home. This meant traveling twelve miles over nearly impassable roads. A blizzard then could possibly have cost one or two lives. Such situations occurred not once but a number of times. Aged persons with prolonged illnesses can better be refused hospital beds than those with emergency illnesses. Appendicitis cases requiring immediate operation have to be cared for in the halls and corridors after operation. Such experiences are common to every hospital and location in the state. Hospital administrators are compelled to refuse hospital beds for the aged, for chronic illnesses, or for anything but emergencies of either a medical or surgical nature.

It is because our hospital system is adapted only to handling of acute conditions that the whole country is so lacking in domiciliary or convalescent homes, and in hospitals for the aged and chronically ill. On a national level only 28,000 acceptable beds are available for the chronically ill, and 248,000 more such beds are needed. In Minnesota in 1948, there were 564 acceptable chronic disease hospital beds whereas the total needed was 5,634 or ten times the number actually available. Solution of this problem only too obviously is construction of more hospitals for the aged and chronically ill.

Financial Problems of the Physician

The second general problem regarding medical care of the old age assistance recipient is financial. To give you as broad coverage of this as well as of the other matters discussed, many doctors in various other sections of the state have been interviewed. So, the following impressions are not mine alone. Furthermore, the suggestion has been made by conference members that I discuss some of the financial aspects as physicians see them.

Most frequently, the point of dissatisfaction of the doctor about the bill for medical services is, "Who is responsible for the bill, the patient or the welfare agency?" Old age assistance patients often do not identify themselves as such when seeking medical care. The doctor consequently makes his usual charge instead of the reduced fee charged such patients. When medical service is ended, a bill is sent to the patient. This procedure elicits the information for the first time that the patient is receiving Old Age Assistance. Consequently the bill must then be reduced and, as the patient usually asks, sent to the welfare agency. Then, word is received from the executive secretary that the patient has been receiving a grant for medical care and should pay the bill himself. At other times, a check is received covering part or all of the bill for medical services.

Often the physician is both confused and a little disgruntled. He is confused because he does not know from one case to the next whether the welfare board or the patient is to pay the bill. And he is disgruntled since regular charges have had to be reduced because the patient is unidentified as an Old Age Assistance recipient. His discontent is not lessened when he recalls that fees for such patients were reduced because payment for their medical services was practically guaranteed. Yet, as frequently as not, when the grant is given the patient, the money does not reach the doctor.

It is quite obvious that the basic cause of this type of complaint is the unrestricted grant required by federal regulations. But almost equally responsible is the lack of uniformity of handling these financial policies by the 87 counties of the state. Many doctors treat patients from more

than one county. Difference of policies in the different counties further confuses him.

Generally speaking, physicians of the state do not understand that federal regulations require that the money be given recipients for medical care without policing the use of the grant. Several years ago, a survey revealed that in some instances as much as 50 per cent of money paid recipients for medical care did not reach the attending physicians. Possibly this is one reason that doctors are criticized for the high cost of medical care. Surely, closer liaison between welfare and medical groups would acquaint doctors with such regulations. Moreover, it might provide the doctor an opportunity to secure payment from recipients when it has been covered in the grant. Beyond that, when federal regulations are responsible for misapplication of funds, efforts should be made by all concerned to see that these regulations are changed.

As mentioned, lack of uniformity in payment of physicians bills in different counties contributes to confusion and resentment. When the medical bill can be paid by increasing the recipient's total grant to $50 a month over a six-month period, advantage lies in the country's handling the matter in this way to secure federal participation. This is not fully understood by all doctors, and again suggests better liaison between the two groups. Nevertheless, were it understood, the attending doctor would still not know which medical bill would be handled this way and which one would be paid in full at once by the welfare agency. Before the doctor secures such information, several months have passed, and possibly some of the money paid the recipient for medical care has already been spent otherwise.

Still another point of dissatisfaction is the discrimination of welfare boards in payment of hospital and doctor bills. More often than not, according to some doctors, the hospital bill is paid at once and the doctor is compelled either to wait till the six months has expired or to accept small monthly payments. Again, these monthly payments may or may not be made by the recipients. Besides the reduced fees for such patients, which reduction is not made by hospitals, doctors often not only wait prolonged periods for their pay, but actually lose a part or all of their bill. Uniformity of handling hospital and doctor bills would avoid these points of dissatisfaction and the inequities involved.

Terminal medical care bills still remain a bone of contention. By these terms, doctors mean medical bills remaining unpaid on the books after the death of the old age assistance recipient. They may be for medical service dating back some months prior to the recipient's death. Or, they may be items related entirely to the recipient's terminal illness. While there are fewer actual terminal illness bills unpaid, there are some. Quite frequently the unpaid items extending back over many months represent appreciable losses. Some state-wide policy which is fair and reasonable to all concerned would eliminate this type of complaint.

Other Areas of Physician-Welfare Discord

At this juncture, it may be best to explain that whatever has been said or is to be said is intended solely as constructive criticism. You as administrators of the welfare program are entitled to know the technical difficulties and the dissatisfactions of the doctors who provide the service. Similarly, the medical profession should learn and know the administrative problems which you face. It is with this viewpoint, one which envisions ultimate solution of joint problems, that I am presenting these matters. Looking at the matter in this way there still remain several features which require consideration.

Frequently, welfare boards have complained about the seemingly excessive medical care given these patients. Almost every doctor, at least in rural areas, knows patients who seldom, if ever, sought medical care until they were on Old Age Assistance rolls, and then regularly and frequently insisted upon care of inconsequential illnesses. This same demand for medical care became apparent in the Farm Security Administration medical care program in Morrison County. When medical care costs were assumed by the governments of New Zealand and England, demand of the people for more medical care raised costs of these programs enormously. It is just another facet of such thinking that makes such patients demand hospitalization when someone else bears the cost, whereas hospitalization was not to be considered when its cost came from the patient's own pocketbook.

This aspect of the matter immediately poses the question, "When is medical care needed and when is it unnecessary?" When the type and frequency of medical care does not change before and after

the patient's sixty-fifth birthday, it is to be assumed that the patient is as much entitled to care when the government pays the bill as when the patient himself pays it. When the patient's physical condition before age 65 is neglected because of insufficient funds, one of the objectives of the social security program has been to provide adequate medical care at government expense. So, these two groups of old age assistance recipients are fully entitled to proper and adequate medical care at government expense.

It is the group which immediately demands more care at government cost than the type of illness or change in financial status warrants that causes difficulty for both attending physician and welfare workers. Practically all doctors are so busy that they do not want nor need such cases. Yet, it is this type of patient which has been responsible for the belief of welfare workers that doctors are using such patients to build practice or increase income. Two very real problems face the doctor in these cases. Morally and otherwise, it is not proper for the doctor to neglect anyone needing medical care. So, when such a patient presents himself to the doctor, it is imperative that he determine the physical condition of the patient. Doctors, almost without exception, have this attitude. Who is to be responsible for the bill is of secondary consideration. In solving the dilemma of neglect or adequate care, the error is usually on the side of proper medical care.

Suggestions for Improvement

Physical hazards and constitutional traits of persons sixty-five years of age or older inherently raise medical care costs for this group of people. Understanding and acceptance of such factors will assist materially in avoiding friction over their seemingly excessive medical care bills.

The next problem, hospitalization, can best be solved by construction of more domiciliary institutions, convalescent homes, and hospitals for the aged and chronically ill. Such institutions can be operated at a much lower per diem cost, since it is the special services required in any hospital for treatment of acute and emergency cases which raise per diem costs. Education of the public, and molding public opinion regarding the need for these facilities is perhaps a joint welfare-medical responsibility.

Confusion and discord concerning medical care bills for the aged can best be solved by a uniform equitable system of payment of hospital and medical bills by welfare boards throughout the state. Where federal regulations encroach upon state philosophy, principles or policy, a sustained and united effort to change federal regulations should be followed to its successful conclusion. This, too, is probably a joint welfare-medical responsibility.

And finally, the whole area of misunderstanding and confusion regarding joint medical-welfare matters could be greatly improved by a reactivation of county Medical Advisory Committees. Physicians have offered their services and cooperation in this regard. Exploitation of these committees by welfare boards throughout the state should be enlightening to both groups. It is only by harmonious liaison between the two that these questions can be answered for the greatest good to the people served, the old age assistance recipients.

THE PHYSICIAN AS HEALTH EDUCATOR

Little can be accomplished in preventive medical service without the intelligent co-operation of the family. The physician rendering such service is, therefore, primarily a health educator. Although health education in the mass has been adopted by schools, health departments and industries, individual and family instruction is the most effective approach. Every health examination from the prenatal period to old age should be a session in health education, with simple explanation of the reasons for various tests, favorable comment on normal findings and instruction on how deviations from the normal can be overcome or held in check. Such procedures are paramount in winning the confidence of the individual and family in the skill and personal interest of the physician.—Henry E. Meleney, M.D., The Milbank Memorial Fund Quarterly, July, 1949.

SOURCES OF ERROR IN THE DIAGNOSIS OF FEEBLEMINDEDNESS

GRACE ARTHUR, Ph.D.
Saint Paul, Minnesota

OF LATE, a good deal of confusion has been created in the thinking of both lay and professional groups in regard to feeblemindedness. Reports with titles such as "They are Feebleminded No Longer" do more than imply that feeblemindedness can be cured. By definition, the mental defect existing from birth or from an early age, that prevents an adult from managing himself or his affairs with ordinary prudence, is a permanent condition. This amentia, or general mental defect which is accompanied by defective development of the nerve cells of the brain, is not likely to be corrected by improved habit training or increased self-confidence.

Unfortunately, there are still individuals who are convinced that they can identify the feebleminded without recourse to laboratory procedures. It is such snap judgments that furnish the background for overnight recoveries. Physicians, teachers and social workers are likely to overestimate the ability of the outgoing, talkative child, and to underestimate the potential intellectual power of the child with a specific handicap. The special defect is confused with general defect, because it tends to lower the reaction level. The dull child with poorly fitted glasses hasn't a chance on tests requiring vision. More than one child with impaired hearing has been committed as feebleminded because he could not learn in the regular classroom, and was found to be unable to respond adequately in verbal test situations or in those where verbal instructions were given.

Thomas was a tall, handsome, adolescent boy with an I.Q. of 85. He walked with a severe limp. It was hard to believe that in his pre-school years he had been diagnosed "Spastic paralysis. Idiot."

The child with delayed speech is at a terrible disadvantage. If he is suffering from oral inactivity, few people understand him when he tries to talk, and his original handicap is augmented by emotional upset. One boy with normal appearance, little speech, but good adjustment to ordinary life situations, had collected a series of I.Q.'s between 50 and 60 on the Binet and other verbal scales. When examined with the Point Scale of Performance Tests, which can be administered without any speech on the part of either the psychologist or the patient, he earned an intelligence rating of Somewhat Superior, with an I.Q. of 112. When he earned this rating he had not been "cured" of anything. He simply was given an opportunity to demonstrate his general intelligence level under circumstances where he was not handicapped by his very defective speech.

It is recognized that defective speech is common among individuals with retarded intellectual development. But it is faulty logic to assume that every individual with defective speech is suffering also from general mental retardation. One child who could not talk plainly at the age of five years accomplished very little when tested with the Binet scale. But the combined rating from the Arthur Adaptation of the Leiter International Performance Scale and the Revised Form II of the Point Scale of Performance Tests yielded an I.Q. of 140. Both scales can be administered without the use of any speech on the part of either the patient or the psychologist. From the quality of his work, his capacity for auto-criticism, and the general intelligence level of his family, there was every reason for accepting his nonverbal rating as a valid measurement of his rate of intellectual development. As a result, his training was adapted to his general developmental level, and not limited to that of other children with the same amount of speech, or of the same chronological age. A wealth of new experiences created a greater need for speech, and speech began to improve. (Speech therapy was needed but was not available in this situation.)

The special disability that causes most confusion in the diagnosis of feeblemindedness is a specific reading disability described by Hinschelwood under the name of Congenital Word Blindness. Like some types of feeblemindedness, it has been regarded as hereditary. It is more common among males than among females. Like musical ability, it is independent of brightness or general intelligence, occurring among the very bright as often as among the dull. If neglected, it tends to lower the Binet I.Q. and lowers ratings obtained with all other verbal tests, and tests where instructions must be given verbally.

Donald was a homely, friendly little boy with general ability at the low average level. Nobody thought of him as anything but normal until he spent year after year in school without being able to learn to read. His Binet I.Q. slipped from a comfortable 92 to a less comfortable 80, and down to an alarming 69. During this period, his I.Q. on the Point Scale of Performance Tests was 92, as it was unaffected by school learning or the lack of it. The year he was twelve years old, he had the good luck to be in a school where tutoring under psychological supervision could be provided. When taught by methods suited to his special intellectual organization, he began to learn. When satisfactory reading skills had been acquired, and he was no longer handicapped by inability to deal with a printed page, a re-examination on the Binet scale again yielded an I.Q. of 92. Early diagnosis of specific reading disabilities saves anxiety on the part of the parents and emotional disturbance for the child by providing the kind of teaching method which his particular reading difficulty requires.

To avoid mistakes in the diagnosis of feeblemindedness, full weight must be given to all physical handicaps. A complete psychological examination must be given, and not just a Binet test or any other test depending on verbal instructions. Both verbal and non-verbal ratings are necessary to give a complete picture. For the school-age child, care must be taken to avoid confusing school failure due to a specific disability with general retardation. The time element, too, is important. A short scale seldom yields as reliable results as a full scale. A child under observation in standardized situations for two hours has a fairer opportunity to demonstrate his average level of response than he would in a time-saving test. It is a commonly accepted rule that a final diagnosis is never made on the basis of a single examination, no matter how thorough that may be. A tentative diagnosis, a constructive plan of treatment, an opportunity to observe the capacity of the child to respond over a period of time, and a re-examination at the end of six months for a pre-school child, a year for a grade school child, and at the end of a year on alternate forms of the scales originally used for pre-adolescent and adolescent patients would serve as a sound basis for diagnosis. With more careful diagnosis, there will be less need and less opportunity for miraculous recoveries. Moreover, remediable conditions will be discovered in time to be helped before emotional disturbances enter in and complicate relatively simple problems.

The day is past when the family physician told the anxious parents to go home and "quit worrying"—and gave no further advice. In all situations where a child is failing to develop normally, or to make a satisfactory school adjustment, parents need specific, detailed advice as to what to do *now,* if the condition is to be helped to improve, or prevented from growing worse.

35 North Grotto

NATIONALIZED MEDICINE

A review of the background of this movement to nationalize medicine shows that two powerful lobbies have developed over the past 20 years—one outside the Government, headed by Michael M. Davis, the other inside the Government, headed by Isidore S. Falk. Aiding the nongovernment lobby are many Communist-front organizations, notably the International Workers Order. Davis' lobby, the Committee for the Nation's Health, draws a considerable part of its membership from Communist-front organizations. Out of 166 CNH members listed on that organization's letterhead, 91 are members or supporters of subversive organizations working to overthrow the United States Government by force and violence if need be. Whatever their methods, they are opposed to the capitalist system and to our way of life. One of their main weapons is national compulsory social insurance.

The Committee for the Nation's Health has invaded Congress. It has the ear of the President.

The program for nationalization is being sold by misrepresentation regarding the way in which it would be administered and the costs. It is a fraud on the American people.

This program is one for the socialization or nationalization of medicine. The essence of socialized or State medicine is *control by the State and payment for services out of tax funds.* The Federal Security Agency has tried to write a new definition stating that the program would not be socialized if the physicians were not salaried servants. That is not the issue. The issue is *control* and *method of payment.* When a National Social Insurance Board, under the direction and supervision of a Federal official, writes the rules and regulations for *all* the health personnel of the country, for all hospitals, pharmacists, *and patients,* the resulting medical care program is *socialized* or *State medicine.* Indeed, it is *nationalized medicine,* notwithstanding assertions to the contrary.

The present bill is a first step, and a long one, toward complete nationalization of medicine. The ILO stated:

"The fact is that once the whole employed population, wives and children included, is brought within the scope of compulsory sickness insurance, the great majority of doctors, dentists, nurses, and hospitals find themselves engaged in the insurance medical service, which squeezes out most of the private practice on the one hand, and most of the medical care hitherto given by the public assistance authorities on the other. *The next step to a single national medical service is a short one . . .*" (Italics mine.)—American Medicine and The Political Scene, MARJORIE SHERON, June 10, 1949.

Case Report

HEMOLYTIC JAUNDICE ASSOCIATED WITH HEMOGLOBINURIA

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THIS IS the case of a three-year-old white boy, who was first seen on June 15, 1946, with the chief complaints of fever (103.8°), earache, reddish urine, anorexia and listlessness of one week's duration. The present illness began approximately one week before admission when the child complained of a sore ear and was found to have a mild fever. This cleared and he felt fine until the day before admission when he was listless, without appetite, and his mother noted that he was passing dark urine. On the day of admission he vomited twice, passed a small amount of "bloody" urine and was noted to have a temperature of 103.8° (rectal). His past and family history were noncontributory to the present illness.

Physical examination revealed a well-developed and well-nourished white male child, three years of age, in moderate distress. His temperature was 101.5° (rectal), pulse was 80, and his respirations were 20 per minute. Blood pressure was normal. He was slightly pale, and an occasional cough was noticed. His face was pale and the upper eyelids were sightly edematous. Lymph nodes in the neck were shotty, bilateral, and tender to palpation in the left posterior cervical chain. His tonsils were 2-plus enlarged and slightly reddened. The oral pharynx was also moderately infected. The ears were normal. His chest was clear to auscultation and percussion, and his breathing was without distress. Examination of the heart revealed it to be of normal size and shape and to have a soft basal systolic murmur, heard best in the first and second left intercostal spaces. It was thought that it was most probably a functional murmur. The rest of the physical examination was normal.

Laboratory examination was as follows: The hemoglobin was 9.5 grams; the leukocytes were 22,000 with 66 per cent neutrophiles, 25 per cent lymphocytes, 3 per cent monocytes and 3 per cent eosinophiles. Urine revealed a specific gravity of 1.018, pH of 5, 3-plus albumin, no sugar and only an occasional erythrocyte and leukocyte.

Our impression at this time was that the child had a hemorrhagic nephritis, so the urine was cultured and he was given penicillin, 30,000 units intramuscularly every three hours.

The next day his condition, if anything, was worse. He had a pale sallow complexion, his eyelids were increasingly edematous and he was very listless. Urine at this time revealed the same dark brown color as on admission; he was oliguric, there was still only an occasional erythrocyte present, but the benzidine test was 2-plus. Blood urea nitrogen at this time was 15 milligrams per cent, and the sedimentation rate was 116 millimeters in one hour. Still not knowing what we had, we continued the same treatment. The next day it was noted that he was definitely icteric and that the liver was now enlarged 2 centimeters below the rib margin on the right. Blood at this time revealed a hemoglobin of 4.6 grams with an erythrocyte count of 1.48 million, the urine was dark colored and as above; also it was found to show 1-plus urobilinogen but to contain no bile. It was also negative for porphyrins. At this time a serum bilirubin was 2.34 milligrams per cent, alkaline phosphatase was 18 (10 to 20, normal) and the cephalin cholestrol was negative to 1-plus, indicating a possible retention jaundice (hepatitis). The patient's cells hemolyzed in the dilutions .30 through .60 in salt solution (normal). Several diagnoses were entertained. One would expect a hemolytic icterus to have produced much more urobilinogen in the urine than seemed to be present for this degree of anemia. A hepatitis would be an exceedingly rare cause of the degree of anemia present in this patient. Bile was not found at any time, furthermore, in the urine.

The patient was immediately transfused with 100 c.c. of citrated blood intravenously, and I began to smell the "proverbial rat." Spectroscopic examination of the urine was ordered for the next day, and it came back very positive for hemoglobin. In spite of the transfusion on the third day, his hemoglobin dropped another gram to 3.9 grams and although the urine was highly colored, no erythrocytes were found. An Esbach test revealed that our patient was losing albumen at the rate of 1.6 grams per liter. Reticulocyte count on this same day, the fourth hospital day, was 8 per cent, indicating a marked destruction and regeneration of erythrocytes going on. He was given in all 300 c.c. of fresh, type A Rh-positive blood that day, with immediate improvement. The urine seemed to get clearer immediately. Blood examination on the fifth day for autoagglutinin for hemolysins revealed moderate agglutination at 37° and at 27° C. and marked agglutination at 40° C. There was no hemolysis present at any temperature.

From this time on he received four more transfusions of Rh-positive type A, fresh blood, bringing the entire amount to 1,080 c.c. of blood. He weighed 15.4 kilograms on admission, so that he would have blood volume of some place between 1,150 and 1,500 c.c. We considered that we just about replaced his total blood volume.

The rest of his course was uneventful; the jaundice cleared gradually, the urine cleared almost immediately, and on discharge on the twelfth hospital day his urine

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was entirely normal, his hemoglobin was 15.2 grams per 100 c.c. and his reticulocyte count was 5.5 per cent. A stool urobilinogen on the tenth day revealed 1,277 Ehrlich units. Spectroscopic examination of the urine on the last hospital day was negative for hemoglobin.

Discussion

Any toxin or process that destroys erythrocytes rapidly enough produces hemoglobinemia and hemoglobinuria. This hemoglobinuria is occasionally seen in almost any type of acute hemolytic anemia. The number of toxic agents that are hemolytic is very large, however.

Among them may be cited:

BACTERIA
- Streptococcus
- Yellow fever
- E. typhi

PROTOZOA
- Malaria
- Oroya fever
- Lues

CHEMICAL AGENTS
- Arsenic
- Quinine
- Pyrogallic acid
- Sulfonamides
- Lead
- Phenylhydrazine

VEGETABLE POISONS
- Risin
- Croton oil (Castor)
- Toadstools
- Fava bean

ANIMAL and ENDOGENOUS POISONS
- Snake venoms
- Severe burns
- Administration of serum for tetanus, diphtheria and meningococcus infections.

MISCELLANEOUS
- Blood transfusions
- Paroxysmal cold hemolysis
- Paroxysmal nocturnal hemoglobinuria
- Acute hemolytic anemia (Lederer's)
- Acute crises in congenital hemolytic anemia (rare)
- March hemoglobinuria
- Crush hemoglobinuria

Hemoglobinemia and hemoglobinuria occur when excessive numbers of erythrocytes are destroyed rapidly, especially when the hemolytic process occurs intravascularly. They are usually accompanied by severe anemia, reticulocytosis, increased serum bilirubin, urobilinoginuria and fecal urobilinogen and at times methemaglobinemia and methemoglobinuria. If the concentration of hemoglobin in the plasma is between 60 and 150 milligrams per cent, hemoglobinuria may occur, and may persist until the plasma hemoglobin has fallen below 50 milligrams per cent.

For a careful review of the whole subject of hemoglobinemia and hemoglobinuria, I suggest reading the fine article by Ross.[2]

The only drug that our patient took before the urine was noted to be dark was aspirin, which he had had before. He, of course, did have an infection before the onset of the hemoglobinuria. There are no cases of familial hemoyltic icterus in the background of his family; moreover, as I have said before, it is rare to have hemoglobinuria in familial hemolytic icterus. The presence of 4-plus cold agglutinins in his blood which produced hemolysis *in vitro* was perhaps related to his mild pharyngitis.

Since the initial attack, the patient has had one recurrence of the dark urine. It came about six months after the initial episode and was also preceded by a cold for which aspirin was given. Unfortunately, cold agglutinins were not taken at this time. The mother had thrown the initial urine away by the time I arrived at the home, and subsequent urines were clear. Incidentally, I have suggested that he receive no more aspirin. It has now been six months since the second episode.

Summary

1. A case of acute hemoglobinuria with severe anemia in a three-year-old boy was presented.

2. Differential diagnosis was suggested.

3. The only salient finding in the patient's blood was the presence of marked cold agglutinins with no hemolysis, perhaps related to a mild upper respiratory infection.

4. He received 1,000 c.c. of blood over a period of one week, an amount roughly about equal to his calculated blood volume.

5. Recovery was uneventful, and except for one questionable recurrence he has been in good health ever since.

References

1. Cantrow, A., and Trumper, Max: Clinical Biochemistry. 3rd ed. Philadelphia: W. B. Saunders Co., 1939.
2. Ross, Joseph F.: Hemoglobinemia and the hemoglobinuria. New England J. Med., 233:732-737, (Dec. 13) and 233:766, (Dec. 20) 1945.

DISCHARGED TUBERCULOSIS PATIENTS

Tuberculosis patients discharged from sanatoria face the future with various life expectancies. Their subsequent mortality is in part influenced, as in the general population, by sex, race and age. The fact that they have had tuberculosis and have been treated for it may also affect their length of life. For one thing, tuberculosis is a disease which places great stress upon the family involved. It sometimes reduces the level of living to such a point that the mortality risk of the patient returning to the family group may be increased, since higher mortality rates are associated with lower family incomes. Premature efforts on the part of the patient to return to gainful employment in order to restore the standard of living may result in relapse and death.—Agnes W. Brewster, A.B., and Ralph Carr Fletcher, M.A., Pub. Health Rep., June 3, 1949.

History of Medicine In Minnesota

MEDICINE AND ITS PRACTITIONERS IN OLMSTED COUNTY PRIOR TO 1900

NORA H. GUTHREY

Rochester, Minnesota

(Continued from the November issue.)

The Olmsted County Medical Society.—In Olmsted County the *Rochester Post* of April 4, 1868, carried the following notice: "To the Medical Profession of Olmsted County: All those who feel an interest in the advancement of the profession will meet at the office of Dr. Allen on the 15th day of April, at 2 o'clock in the afternoon to take into consideration the formation of a Medical Society for Olmsted County." The notice was signed *"Many Citizens."*

The same newspaper, on April 25, 1868, carried the following account of the birth of the *Olmsted County Medical Society:*

Medical Organization: A meeting was held by a number of the medical profession at the office of Dr. Allen in this city on the 15th inst., for the purpose of forming a medical association for Olmsted County. The meeting was called to order by Dr. Allen, president pro tem, who submitted a constitution for the Society, which was adopted after discussion and emendation.

The following gentlemen were elected officers of the Association until the first annual meeting in 1869: President, Dr. J. S. Allen; Vice President, Dr. E. W. Cross; Secretary, Dr. R. M. Reynolds.

Committees were appointed by the President to report on the different branches of medical science at the regular annual meetings of the Association, as follows:

Physiology	Dr. W. W. Mayo
Theory and Practice	Dr. H. Galloway
Obstetrics	Dr. J. S. Allen
Surgery	Dr. E. W. Cross
Chemistry	Dr. R. M. Reynolds

The following bill of prices was adopted: visits in the city, one dollar; visits in the country, seventy-five cents per mile; night visits double the above; ordinary office consultation fee, one dollar; physical examination, five dollars; ordinary cases of obstetrics, ten dollars; fractures, simple, first dressing, from five dollars up to twenty-five dollars; fractures, compound and comminuted, from twenty-five dollars up to seventy-five dollars; dislocations, from five dollars to fifty dollars; capital operations from twenty-five dollars up to one hundred dollars; consultation fee, five dollars.

J. S. Allen, M.D.
W. W. Mayo, M.D.
E. W. Cross, M.D.
H. Galloway, MD.
E. C. Cross, M.D.
R. M. Reynolds, M.D.

R. M. Reynolds, Sec'y.

Thereafter the society for a year or two met often, at first in the offices of members, and later at special club rooms, at one time in the Bank Block and later in the rear of Hargesheimer's Drug Store. In addition to the annual business

meeting there were weekly sessions and special quarterly meetings, until by-monthly meetings were adopted, and finally, monthly meetings.

The society welcomed the medical legislation of 1869 as a solution of the local problem of irregular practitioners, and the local newspapers relayed pertinent information to the public. One editor, in discussing the laws and the fines and imprisonment to be imposed on unqualified persons who undertook to practice medicine for pay, said, "This is rough on quacks but no more so than they are on the community." On September 25, 1869, it was announced that a meeting of the Board of Censors of the Minnesota State Medical Society would be held in Rochester on September 30, at Dr. Mayo's office, with the object of examining persons not already licensed who might wish to receive authority to practice medicine, and that on the same day a meeting of the Olmsted County Medical Society would be held at the office of Dr. Cross.

The range of subjects discussed by the Olmsted County Medical Society during its early years was catholic. On January 16, 1869, Dr. Mayo began a series of papers, "The Character of the Earth's Elements, Its function, Development, and Ultimate Destiny, and Its Inhabitants." On February 13, 1869, Dr. Galloway gave an essay, "The Philosophy of Disease," in the course of which he prophesied the time when science would find remedies for all diseases but cancer. Lively discussion followed, after which the faculty discussed charcoal as an antiseptic, the properties of mephitic vapors, and ethnology. It was announced that Dr. J. S. Allen, the president, would read a paper, "Electricity and Lightning Rods" at the next meeting. At a subsequent meeting Dr. Galloway and Dr. Mayo restored clinical character by discussing, respectively, the minute anatomy and the comparative anatomy of the liver, and at the next meeting Dr. Mayo gave a lecture on digestion, illustrated by colored crayon drawings done by himself. Ethnology and evolution held the attention of the group, however, and for several years attention was centered on the theories of Huxley and Darwin. Mr. John H. Whitney, an honorary member, and Mr. H. H. Young, a guest, the latter at one time associated with Dr. Mayo in publication of a newspaper at Le Sueur, were prominent in the discussions. From 1870 for several years the Rochester Conversazione, of the same membership as the medical society but augmented by lay persons, seems to have supplanted the Olmsted County Medical Society, although in 1873, when Dr. Mayo was moving to Saint Paul, a special meeting of the medical group was held to pay him honor.

For ten years after 1874, although mention of the Olmsted County Medical Society did not appear in the public print, the facts that delegations of physicians from the county attended meetings of the state medical society and that these men took an active part in the work of the state society, as will be shown, argue the existence of a functioning county medical group.

On December 4, 1885, the Olmsted County Medical Society was reorganized formally in accordance with the tenets of the Minnesota State Medical Society* and with the provisions of the Minnesota Medical Act of 1883. The account published in the *Rochester Post* of December 11, 1885, is accepted as accurate:

County Medical Society: The Olmsted County Medical Society was organized in this city last Friday. There were present at the meeting Drs. W. W. and W. J. Mayo, E. C. and E. W. Cross, Ida Clarke, and P. N. Kelly, of Rochester; J. E. Bowers, Homer Collins and R. M. Phelps, Insane Hospital; A. W. Stinchfield and N. S. Lane, Eyota; Drs. Trow [A. H. and M. A., father and son], Chatfield; E. A. Holmes, Oronoco; W. T. Adams, Elgin; E. D. Stoddard, High Forest; C. R. Keyes, Byron; and A. W. Hill, Pleasant Grove. The following

*In 1903 the Minnesota State Medical Society took the title "Minnesota State Medical Association." In this article the early title is used except in such parts of biographical sketches as the later title is chronologically correct.

officers were elected: President, W. W. Mayo; Vice Presidents: A. W. Stinchfield and E. A. Holmes; Secretary and Treasurer, Ida Clarke. The rules of procedure and organization were those of the state medical society and the Code of Ethics that of the American Medical Association. Meetings of the society will be held once in two months.

The following fee bill was adopted at the organizational meeting:

FEE TABLE OF THE OLMSTED COUNTY MEDICAL SOCIETY

December 1, 1885

Ordinary office advice or treatment	$ .50 to $ 5.00
Ordinary visit in city or country, one mile from physician's office	1.50
Ordinary consultation	5.00 upwards
Subsequent visit as associate physician	Usual fees
Visit at night (from 10 p.m. to 6 a.m.)	3.00
Visit in cases of smallpox	3.00
Visit in country, per mile	.50 to 1.00
Visit, additional	1.50
Visit in country at night, additional per mile	.25 to .50
Visit	3.00
Visit and passing catheter or boujie [*sic*] if often required	2.00
Introduction of catheter in difficult cases	5.00
Attendance in obstetrics ordinary	10.00 to 20.00
In cases requiring version or use of forceps, additional	10.00 to 15.00
Craniotomy	25.00 to 50.00
Delivery of placenta only	5.00 to 10.00
Detention in cases of obstetrics, over 6 hours, per hour	1.00
Ordinary local treatment of uterus	2.00 to 5.00
Reduction of prolapsus uteri or ani	2.00 to 5.00
Examination per vaginam except in obstetric cases	2.00 to 5.00
Examinations per anum	2.00 to 5.00
Introduction of tampon	3.00 to 5.00
Testing urine	2.00 to 10.00
Administering anaesthetics, including the anaesthetic	2.00 to 5.00
Application of the galvanic battery	1.00 to 5.00
Physical examination of chest or abdomen and prescription	2.00 to 5.00
Examination for life insurance	2.00 to 5.00
Certificate of disability or death	1.00 to 3.00
A letter of advice	1.00 to 10.00
Vaccination, each time	.50

SURGERY

Dressing simple wounds in office or opening abscesses	1.00 to 5.00
Amputation of fingers and toes, each	5.00 to 10.00
Amputation of forearm or leg below the knee	25.00 to 75.00
Amputation of arm below elbow	50.00 to 75.00
Amputation of thigh	50.00 to 100.00
Amputation at shoulder or hip joint	100.00 to 200.00
Reducing simple fractures and dislocations of fingers and toes	5.00 to 10.00
Reducing simple fractures and dislocations of larger bones and joints	15.00 to 50.00
Reducing dislocations of long standing and compound fractures	25.00 to 100.00
Extirpation of uvula	2.00 to 3.00
Extirpation of tonsils, each	5.00 to 10.00
Extirpation of mammary gland	50.00 to 100.00
Extirpation of tumors	5.00 to 500.00
Removal of polypus uteri	25.00 to 50.00
Removal of polypus nasi	5.00 to 20.00
Removal of hemorrhoids	10.00 to 50.00
Removal of testicles, each	25.00
Operation for fistula, in ano	25.00 to 50.00
Operation for fistula lachrymalis, 1st operation	10.00 to 15.00
Operation hare lip, single	15.00 to 25.00
Operation hare lip, double	30.00 to 50.00
Operation cataract	25.00 to 50.00
Operation club foot	25.00 to 50.00
Operation wry neck	25.00 to 50.00
Operation phimosis or paraphymosis	5.00 to 15.00
Operation lithotomy	50.00 to 100.00
Trephining cranium	50.00 to 100.00
Tapping chest	25.00 to 50.00
Tapping abdomen	15.00 to 25.00
Tapping hydrocele	5.00 to 10.00
Radical cure of hydrocele	10.00 to 50.00
Reducing hernia by taxis in difficult cases	5.00 to 20.00
Reducing strangulated hernia by operation	50.00 to 100.00
Ordinary application of truss	1.00 to 5.00
Cauterization of urethra, male	5.00 to 10.00

Cauterization of urethra, female	2.00 to	5.00
Treating stricture of urethra otherwise than by simple introduction of boujie [*sic*]	10.00 to	50.00
Introduction of seton		2.00
Plugging posterior nares	3.00 to	10.00
Treating of gonorrhoea, retaining fee	5.00 to	10.00
(And for subsequent treatment as in other cases.)		
Treatment of syphilis, retaining fee	10.00 to	25.00
(And for subsequent treatment as in other cases.)		
Post-mortem examinations in cases of coroner's inquest or proposed legal investigation	25.00 to	50.00
Post-mortem examination in ordinary investigation—*may charge*		10.00

The fees for all operations not mentioned in the above will be governed by the importance of the case and the responsibility of the operator.

EXTRACTS FROM THE REGULATIONS OF THE SOCIETY

I.

All bills for professional services are due and payable as soon as the service is rendered, and may be charged with legal interest if unpaid at the expiration of six months from the time above specified.

II.

Resolved, That the members of the Olmsted County Medical Society, in publishing this Fee Table and Regulations, hereby express their willingness and desire to make suitable deductions from the regular prices, when the circumstances of patients are such as to render them worthy objects of such charity.

From the beginning the membership of the Olmsted County Medical Society included most of the reputable physicians of Olmsted County and confreres from counties other than Olmsted. Dr. W. T. Adams, of Elgin, Wabasha County, was a charter member in 1868. After 1885, physicians from outside counties were admitted each year. Between 1885 and 1888, S. W. Ranson, Dodge Center; S. S. Walbank, Duluth; S. H. Van Cleve, Mantorville; J. F. Percy, Mazeppa; J. W. Scott, St. Charles, and C. N. Frye, Zumbrota, were enrolled. In the next year or two the society welcomed C. O. Wright, Kasson; F. W. Calkins, Mazeppa; J. P. Waste and N. S. Tefft, Plainview, and W. A. Chamberlain, St. Charles. Within the next few years many other physicians well known in southern Minnesota became members, it appears, among them H. F. Peirson, Austin; Seth E. Howard, Goodhue; A. J. Button, Hammond; C. L. Chambers, Kasson; M. H. Cremer, Mazeppa; J. McPeek and —— Holtz (Holst?), St. Charles; J. B. McGaughey, Winona; G. E. Campbell, Wykoff; C. M. Beebe, J. E. Crewe and K. E. Gryttenholm, Zumbrota, and Dr. Pickard, Burlingame, Kansas.

Since 1885, and probably since 1879, the staff of the second Minnesota Hospital for Insane (Rochester State Hospital) have been active members of the Olmsted County Medical Society. In 1886 Dr. J. E. Bowers, superintendent (1879-1889) of the state hospital, began the pleasant custom, continued ever since, of inviting the society to hold at least one meeting yearly at the state hospital and of supplying a clinical program and social enertainment.

There are given here, in addition to the officers of 1868 and of 1885, already mentioned, other officers, all of them physicians, of the county medical society prior to 1900, insofar as record has been available. At the annual meeting in December, 1886, there were elected W. W. Mayo, president; E. A. Holmes, first vice president; W. T. Adams, second vice president; Ida Clarke, secretary and treasurer, and W. J. Mayo, H. H. Witherstine and P. N. Kelly, censors. The officers in 1888 were A. W. Stinchfield, president; J. E. Bowers, vice president; Ida Clarke, treasurer, and H. H. Witherstine, secretary. In 1889 Dr. Bowers was president. At a meeting held in March, 1891, R. McE. Phelps was elected

president; E. D. Stoddard, vice president, and H. H. Witherstine, secretary and treasurer. In 1892 A. S. Adams became president; S. H. Van Cleve, first vice president, and H. H. Witherstine, secretary and treasurer, a capacity in which he was to serve at many different times. In 1894 A. L. Baker was elected president, and C. E. Fawcett, vice president. In January, 1895, Dr. Van Cleve became president; C. O. Wright, vice president, and Dr. Stinchfield, secretary and treasurer. In 1896 R. C. Dugan was president; C. L. Chambers, vice president; C. E. Fawcett, second vice president, and J. G. Cross, secretary and treasurer. In 1897 Dr. Wright became president; F. W. Burns, first vice president; M. C. Millet, second vice president, and Dr. Cross again secretary and treasurer. In 1898 C. H. Mayo was elected president; F. W. Burns, vice president, and J. G. Cross was re-elected secretary and treasurer. As 1900 opened, the officers were E. M. Clay, president; O. C. Heyerdale, vice president; Gertrude Booker, second vice president, and J. G. Gross, secretary and treasurer.

Although, in the period considered here, meetings of the society usually were held in Rochester, the group occasionally met in Eyota, Oronoco, Mantorville or elsewhere. At regular intervals after 1892 the society was host at annual meetings of the Southern Minnesota Medical Association, which was founded at Winona on July 28, 1892. It is interesting, in relation to the latter association, that at a meeting of the early Olmsted County Medical Society, on January 16, 1869, "a communication was read from Dr. Youmans of Winona, suggesting that the organization [O.C.M.S.] be extended to include all Southern Minnesota. It was moved and passed that the entire membership form a committee to correspond with practitioners in the district generally to the end of organization of such an organization."

Since its reorganization in 1885 the Olmsted County Medical Society has functioned actively, increasing its membership and the scope of its work. As community of interests among physicians of Olmsted County and physicians of neighboring counties increased, amalgamation of local medical groups came about. On November 14, 1832, at Rochester, the Houston-Fillmore County Medical Society merged with the Olmsted County Medical Society, to form a three county society. On July 5, 1934, the Dodge County Medical Society joined with the group, to form the Olmsted-Houston-Fillmore-Dodge County Medical Society, the charter of which was issued on July 15, 1934.

Physicians of Olmsted County in the Minnesota State Medical Society.—When the Minnesota State Medical Society was reorganized in Saint Paul on February 1, 1869, after nearly sixteen years of inaction, the medical profession of Olmsted County was represented at the meeting by Dr. W. W. Mayo. On this occasion Dr. Mayo was elected a member of the board of censors and of the committee on finance and also was appointed to determine the number and the names of regular physicians in Olmsted County and the names and classification of practitioners in the county who were not recognized as physicians by the state medical society. At the semi-annual meeting of the state society at Owatonna on June 16, 1869, Dr. Mayo reported that there were in Olmsted County eight regular physicians and six irregular practitioners.

At the meeting of June 16, 1869, Dr. E. C. Cross, of Rochester, became a member of the state society. In 1870 four other physicians from Olmsted County, E. W. Cross, H. Galloway, J. S. Allen and W. P. Belden (the last-named long resident in Fillmore County), all then of Rochester, were admitted, and in the following year Dr. C. E. Teel, of Eyota, became a member. It was in 1870 that Dr. Harriet E. Preston, of Rochester, the first woman to seek recognition by the

state society, presented her application and thereby started a controversy that was to continue ten years before it ended in admittance of women physicians to the society, and in the election to membership, in 1880, of three women, among them Dr. Preston, who was then in Saint Paul. In 1871 Dr. D. S. Fairchild, of High Forest, was enrolled; in 1872, Dr. A. Grant, of High Forest, Dr. G. W. Nichols, of Rochester, and Dr. A. W. Stinchfield, then of Dundas, but soon to remove to Eyota, Olmsted County, became members. Until 1878 there was little change in the representation from Olmsted County, with the exception of the removal of Dr. Fairchild to Ames, Iowa, in 1872, and the return of Dr. Belden to Hamilton, Fillmore County. In 1878 Dr. S. S. Bishop, of Rochester, was enrolled. In 1879 Dr. J. E. Bowers, already a member from St. Peter, settled in Rochester. In 1880, because of removals, the membership from Olmsted County was four: Drs. Bowers, E. C. Cross, E. W. Cross and W. W. Mayo. It was increased in 1881 by the coming to Oronoco of Dr. E. A. Holmes and to Rochester of Drs. W. A. Vincent and Ida Clarke. In 1884 Drs. P. N. Kelly and W. J. Mayo, both of Rochester, were enrolled, and in 1886 Dr. N. S. Lane, of Eyota. In 1888 Dr. C. R. Keyes, of Byron, and Dr. C. H. Mayo, of Rochester, were admitted; in 1889 Dr. A. L. Baker, of Eyota, and Drs. R. McE. Phelps and H. R. Randall, of Rochester; in 1890 Dr. A. F. Kilbourne, of Rochester, was enrolled; in 1891 Dr. R. C. Dugan, Dover; and in 1892 Dr. N. M. Baker, Rochester. By 1895, again because of changes of residence, the membership in the county had been reduced to seven. In 1897 there were added Dr. C. Graham and Dr. J. G. Gross, both of Rochester; in 1898 Dr. H. H. Witherstine, Rochester, and in 1899 Dr. E. M. Clay, Oronoco, and Dr. M. C. Millet, Rochester.

Throughout the period 1868-1899 the members from Olmsted County were active in the work of the state society, acting as delegates to the American Medical Association, sending in reports to the state group on disease in their localities, contributing to programs and discussions, serving on committees and on the board of censors, and, some of them, in offices. Dr. W. W. Mayo, in 1871, was third vice president of the Minnesota State Medical Society and in 1872 was elected president. In 1875 Dr. A. W. Stinchfield was elected corresponding secretary, in 1876 Dr. E. C. Cross became second vice president, in 1886 Dr. E. A. Holmes was third vice president and in 1889, second vice president. In 1891 Dr. W. J. Mayo became first vice president, in 1892 second vice president, and in 1893 president, the youngest man, until then, to hold the presidency. It was at the meeting of 1891, when a paper on acute intestinal obstruction, by Dr. S. W. Ranson, of Dodge Center, failed to arouse the discussion it obviously merited, that Dr. W. J. Mayo electrified the assembly by rising to say, "In the language of the adjutant general of this state, I would like to know what we are here for. We from the country come up here to the city. We accept the hospitality of the gentlemen who live here. We find out that they are royal good fellows, but we come here to learn something from them. We don't invite them down to our town because we cannot give them the amount of learning and experience and all that sort of thing that we can get here; so when we leave our business and come up here, we feel as though they ought to talk to us. We think the papers should elicit something more than the experience of one man. We want the experience of leaders who live up here in the cities. . . ." Thorough discussion followed. The chairman, Dr. E. C. Spencer, said: "I think most of the instruction which the society has received, outside of the papers, has been from the members from the country, and especially the two from Rochester." At the close Dr. Mayo said, "I would like to thank the gentlemen from Saint Paul and Minneapolis in the

name of the profession outside of the Twin Cities for the noble way they have responded to my request."

Hospitals in Olmsted County Prior to 1900

Within the last twenty years of the nineteenth century there were established at Rochester, Olmsted County, three hospitals, on of which was a state institution for the care of the insane.

The Second Minnesota Hospital for Insane (since early 1893, the Rochester State Hospital).—Not until 1866 did Minnesota provide institutional care within its own borders for the insane among its residents. On April 28, 1862, one insane patient was sent from this state to the Iowa State Hospital, which subsequently received fifty-five other patients from Minnesota, on agreeement that all of the Minnesota patients should be removed by the autumn of 1866. In the spring of 1866 six patients were sent from Minnesota to St. Vincent's Institute for Insane at St. Louis, Missouri.

In January, 1866, the Hon. J. V. Daniels, of Rochester, introduced into the state senate a bill for the establishment of a state insane hospital in that city. On March 2, 1886, the Minnesota legislature passed an act providing for such a hospital in southern Minnesota. A board of trustees was appointed and authorized to erect or lease or purchase buildings and as soon as practicable bring back the insane patients from Iowa. The Minnesota Hospital for Insane was established at St. Peter, was opened officially on December 6, 1866, and two days later received its first patient. By 1870 the hospital was crowded; in 1875 appeal was made to the legislature to provide a site for a second hospital. In 1877, when conditions at the St. Peter hospital had become censurable, solution of the problem was approaching.

Since the late sixties or earlier a movement had been growing for the establishment of a state institution in Minnesota for the care of inebriates. Physicians were active in the work, notably Dr. T. H. Everts and Dr. H. C. Grover, of Fillmore County. On March 10, 1873, the state legislature passed an act "to establish a fund for the foundation and maintenance of an asylum for inebriates." This act, amended on March 9, 1874, imposed an annual tax of $10 on every liquor dealer in the state, and on liquor dealers only, the purpose being to raise money for creation of the proposed asylum, the institution to be maintained by continuation of the tax. Accumulation of money proceeded slowly; there was much protest against the law by those affected as being class legislation, and much litigation in test cases. The Supreme Court of Minnesota upheld enforcement of the law. In 1875 the Minnesota State Medical Society appealed to the legislature for immediate action in providing an inebriate asylum. At that session a bill was enacted that located the asylum at Rochester, and soon afterward a board of seven directors was appointed by Governor C. K. Davis, of which Dr. J. A. Leonard, of Rochester, was the local member. A farm of 160 acres east of Rochester was bought and in 1877 erection of buildings was begun.

Opposition to the liquor tax had been increasing steadily, as had the need for additional hospital space for insane patients. On March 7, 1878, the legislature repealed the act providing for an inebriate asylum, passed an act to locate and establish the Second Minnesota Hospital for Insane at Rochester, and transferred to the hospital the funds, lands and properties of the Inebriate Asylum, *provided* that the board of trustees of the hospital "make provision for special departments in the said hospital for the treatment of inebriates."

Inadequate and unsuitable as the unfinished buildings at Rochester were, they were accepted and were brought sufficiently near completion by January 1, 1879, so that on that date the Second Minnesota Hospital for Insane was opened, with Dr. J. E. Bowers, formerly assistant physician at the Minnesota Hospital for Insane, at St. Peter, as superintendent and physician, and with eight men patients, who had been brought from St. Peter the previous day, in residence. By December 1, 1879, there were ninety-four male patients in the hospital. Provision for women patients was yet to be made.

The detailed history of the hospital for insane at Rochester belongs elsewhere in the history of medicine in Minnesota. The great growth of the institution from year to year could be shown dramatically by a time-lapse motion picture. In 1889 a training school for attendants was opened at the hospital, and in 1890 an excellent training school for nurses. The inebriate department, never a suitable division of a hospital for insane, was abolished by legislation on April 27, 1897. An official report of July 31, 1900, shows that there were then 1,251 patients connected with the hospital, 715 men and 536 women. The buildings, several times enlarged since 1879, again were inadequate. The medical staff had increased from one, in 1879-1881, to six in 1900. There were, in 1900, eight official assistants in the hospital and six heads of departments having to do with engineering, farming, cooking, laundry and maintenance. The hospital grounds, in the beginning a stubble field, had become a beautiful park, of recreational value to the staff and especially of therapeutic value to the patients.

It has been said by able psychiatrists that the rulings instituted by Dr. Bowers, around 1886, for the care, treatment and control of insane patients were excellent and that they may be considered modern. From about 1883, Dr. W. J. Mayo, and from 1888, Dr. C. H. Mayo, it has appeared in many official reports from the state hospital, gave "kindly assistance in important surgical cases," as they did for many years at the state hospital at St. Peter also. In 1926 it was stated, "Most amicable relations have always existed between the officials of the Rochester State Hospital and the members of the staff of the Mayo Clinic. The mutual exchange of consultation services between the two institutions has been of great advantage to both."

In its seventy years (1949) the state hospital at Rochester has had four superintendents: Dr. J. E. Bowers, 1879-1889; Dr. A. F. Kilbourne, 1889-1934; Dr. B. F. Smith, 1935-1942; and Dr. M. C. Petersen, 1942——. In 1949 there were in prospect, in the near future, complete reconstruction and enlargement of the buildings and extension of facilities and departments.

(To be continued in the January issue.)

President's Letter

Last Page on the Calendar

Last January, when I began this series of President's Letters, I tried to express my appreciation of the high honor that had been paid me by the Minnesota State Medical Association and to indicate my awareness of the responsibilities contingent on leadership during a time when the medical profession faced the most critical issues in its history.

Now, as the year is almost over, I'd like to reiterate my appreciation: Serving as your president during 1949 has been an unequaled and invaluable experience for me. I have enjoyed meeting with so many of my colleagues throughout the state during my travels for the Association. I have been impressed with the serious intent and enthusiasm of the committees whose sessions I have attended as an ex officio member. In brief, my year as president has given me a 50-yard-line view of the highly divergent, yet interwoven activities of the Association and a renewed understanding of the part that sincerity, co-operation and individual initiative play in the furtherance of these activities.

As I look back over the year, I can say unhesitatingly that we have reached high points of achievement, not only in medical research and practice, as we strive to make healthy living a reality for ever greater numbers of people, but also in the closely related field of medical economics, where threats to the public's health have sprung from political origins.

Credit for the progress the Association has made goes to every Minnesota doctor who, not content with diagnosing and treating the ills of his own patients, helped toward diagnosing and treating the nation's ills.

Special thanks are due the officers and councilors and committee chairmen, all of whom, I know, worked devotedly and long during the year to fulfill the obligations delegated to them.

With 1949 almost history, our attention turns to the year that lies ahead. Not an easy year, we know, but the challenges and their inherent opportunities for service will be greater than ever; and with the unfailing co-operation of every member and the wise and able leadership of Dr. F. J. Elias, our new president, the Minnesota State Medical Association will make new progress in safeguarding the nation's health and freedom.

Merry Christmas - - Happy New Year



President, Minnesota State Medical Association

Editorial

Carl B. Drake, M.D., *Editor;* George Earl, M.D., Henry L. Ulrich, M.D., *Associate Editors*

GRIEVANCE COMMITTEES

OCCASIONALLY a patient has, or feels he has, a grievance against a physician or hospital. When he has a real grievance, it results in injury to the physician or hospital and to the entire medical profession. One justified grievance does more harm to the public relations of the profession than can be counteracted by much favorable publicity. It is, therefore, highly important that there be a mechanism for handling such cases.

Several states, including Nebraska, Utah, Virginia, Indiana and Colorado, have statewide grievance committees and give considerable publicity to their existence. In Colorado, the grievance committee is known as the "Medical Grand Jury." A patient with a grievance is required to make his complaint in a signed statement. A copy of the complaint is sent to the physician concerned, and the complainant is notified that this has been done. The two are asked to get together and settle the difficulty. If this is not successful, the two are asked to appear before the committee in an effort to settle the dispute.

For a number of years, the Minnesota State Medical Association has had a Committee on Medical Ethics which now is composed of Dr. R. D. Mussey of Rochester, Dr. B. S. Adams of Hibbing and Dr. Harold Diehl, Dean of the Medical School, who in conjunction with the Council of the Minnesota State Medical Association handle any complaints submitted. The Hennepin County Medical Society has its Board of Ethics, and the Ramsey County Society uses its Executive Committee to handle such cases. The county societies have all been urged to have similar committees appointed to investigate any grievances. Some have done so. It has been thought, with good reason, that it is sometimes better for a state-wide committee to handle complaints instead of a local committee of confreres; the mechanism exists in Minnesota in the form of the Committee on Medical Ethics of the State Medical Association for use, if so desired, by a county society.

Some of the comparatively few complaints received are from crack-pots with imaginary grievances. Some consist of misunderstanding of charges, such as laboratory fees that are not itemized, and are generally easily settled. Cases of out-and-out overcharging are perhaps the most important ones. The knowledge of the existence of a grievance committee doubtless is effective in reducing the number of instances in which a physician so ignores the dignity of his profession as to attempt to gouge his patient. Although there is some elasticity in the matter of proper fees, an overcharge should be readily detectable by a grievance committee.

THE BRITISH HEALTH "SCHEME"

IN ESTIMATING the desirability or undesirability of our adoption of National Compulsory Health Insurance, an appraisal of how the National Health Service in England is working out should be of inestimable value. The proposed socialization of medicine in our country closely resembles that in operation in England since July 5, 1948. To obtain first-hand information on the subject, John W. McPherrin, editor of the *American Druggist,* made a visit to England this year and personally interviewed physicians, druggists, hospital personnel and individuals including those contacted in the "pubs" in an effort to obtain a comprehensive view of the opinions of those in different walks of life on the health "scheme." The results of his investigation appeared in the July, 1949, issue of the *American Druggist.*

Under the new "scheme" each wage earner contributes the equivalent of $1.02 (before devaluation of the pound) per week. About 17 cents of this tax goes to the cost of the health service, 85 cents being applied to cash benefits, retirement, pay widows' pensions, unemployment, sickness and disablement benefits. Five-sixths of the cost of medical care is supplied by other taxes and amounts to about $80 per family in addition to the $1.02 a week. While this fact has been made pub-

lic, it is apparently not generally realized. The government pays for all medical, dental and hospital care, for drugs, spectacles, et cetera, on doctors' prescriptions. Refills for drugs require new prescriptions.

Each general practitioner receives $4.00 per panel patient which provides his services for the family. Specialists receive special remuneration. Hospital care is provided when beds are available, but some 60,000 are now empty due to lack of hospital personnel.

Mr. McPherrin, as a result of his questioning, found that most physicians and druggists who are better off financially as a result of the "scheme" are favorably disposed. This includes the poorer and mediocre physicians and the druggists who had little prescription business previously. It seems that 70 per cent of drugs were formerly dispensed by physicians. The general practitioner is commonly swamped by the increase in patients, and the volume of business done by the druggist is greatly increased, but his financial gain is only slight because of the prices allowed by the government for drugs.

The public, the author divides into three groups. The first group are the gyppers. They have paid their money and are bent on getting their money's worth in medical service and insist on medicine whether they need it or not. The second group are those who are doing their best to make the "scheme" work and are conscientious in their demands. The third group are the objectors. They employed private physicians formerly and dislike the medical attention now available.

England is experimenting in socialism, otherwise known as the welfare state. This term is coming to be used in our country as though it were different from socialism. The responsibility of the individual to provide for himself is to be shifted to a beneficent government in the belief that the state alone can provide security and happiness. The British were conditioned to the present "scheme" by the panel system adopted in 1911, which included half the population. The Beveridge Plan, proposed in 1942, which formed the structure of the present "scheme" received the support of all the political parties in England —the druggist, and to some extent the medical specialists. While the general practitioners strongly opposed the "scheme," they had insufficient backing. This made its adoption comparatively easy.

Upon his return to America, Mr. McPherrin took part in an informal debate with Oscar Ewing on the subject of Compulsory Health Insurance at the annual convention of the Proprietary Association at White Sulphur Springs, West Virginia. The issue narrowed itself down to the question of whether it is possible to manage any compulsory medical care system without the imposition of staggering government controls. Ewing believed it was possible and painted a glowing picture of increased drug volume for producer and distributors under government health insurance. McPherrin contended that a complicated set of government controls would be necessary to support any such action. Be it said to the credit of the Proprietary Association that the lure of more business did not prevent the members from going on record as opposed to government health insurance.

The British experiment has been costly, both financially and in medical standards. It has been recently reported that it has been necessary to charge a shilling for each prescription in order to reduce the number unnecessarily prescribed. It is incumbent on the medical profession and the people of America to develop other methods of providing medical care which will preserve individual initiative and responsibility rather than shifting the responsibilty to the government. This can and is being done.

JOURNALS FOR JAPAN

THE MEDICAL SCHOOL of Tokyo University is greatly in need of medical journals. Its files for the past eight years are scant and the few copies on hand are much worn through use. Contributions of spare journals of every description, including those of the specialties and state medical journals, would be greatly appreciated.

Contributions should be sent to Dr. Tomio Ogata, Editor, Journal of the Japan Medical Association, Department of Serology, Medical School, Tokyo University, Hongo, Tokyo, Japan.

THE 1949 TUBERCULOSIS CAMPAIGN

"Minnesota's record of tuberculosis control is an inspiration to the entire civilized world as the finest job done anywhere on the globe. The death rate has been brought down through hard work, intelligently planned and diligently carried out."

Speaking at the state Christmas Seal dinner, October 25, at the Coffman Memorial Union, University of Minnesota, Dr. Edwin R. Levine, director of Chest Services,

Michael Reese Hospital and medical director of Winfield Hospital, Chicago, lauded the program against tuberculosis carried on in this state.

The Christmas Seal dinner launched the 43rd annual tuberculosis fund-raising and educational campaign. Christmas Seal funds finance the national, state and local program of case-finding, education and medical research. Ninety-five per cent of the funds raised remain in Minnesota to support the local and statewide programs, and five per cent make possible the medical research and other activities of the National Tuberculosis Association.

Facts which speakers, newspaper articles, radio programs and leaflets are bringing to the attention of the public in the intensive educational campaign accompanying the sale of Christmas Seals include the following:

Minnesota's tuberculosis death rate struck an all-time low in 1948—17.1 per 100,000 population. The death rate has been reduced 87 per cent over the past 40 years. But this preventable and curable disease took the lives of 502 men, women and children in the state in 1948, and there are an estimated 5,000 active cases in the state.

Christmas Seal funds are helping finance county mass X-ray Surveys, tuberculin testing surveys of school children, tuberculosis follow-up work and a continuous program of education, using all media for reaching the public.

Early discovery of tuberculosis aids early recovery. In the Mass X-ray Surveys of apparently healthy people, approximately 80 per cent of the cases discovered are minimal cases. In former years, approximately 80 per cent of the cases entering Minnesota sanatoriums were moderately or far-advanced cases.

No county, state or nation are safe until all are safe. In this connection, the following facts are presented:

Tuberculosis kills from three to five million people in the world annually.

Tuberculosis is one of the most important health problems facing the American people today.

It is important because in the productive young age group from 15 to 34 it costs more lives than any other disease.

It is important because it is a communicable disease which is killing nearly 1,000 Americans a week, 125 a day—at the rate of one person every 11 minutes.

It is important because 500,000 people in this country are estimated to have tuberculosis, one-half of them unknown to health authorities.

Tuberculosis is an important public health problem because *it can be prevented.*

GOVERNMENT INVESTIGATION OF MEDICAL SOCIETIES

Dr. R. B. Robins of Camden, Arkansas, Democratic National Committeeman from Arkansas and member of the House of Delegates of the American Medical Association, recently issued the following statement in reply to Attorney General J. Howard McGrath:

"Attorney General McGrath's attempted explanation of the current wave of investigations which the Department of Justice is directing against medical societies throughout the Nation is an insult to the intelligence of the American people.

"As a United States Senator, Mr. McGrath was one of the leading advocates of Compulsory Health Insurance and one of the most intemperate, vitriolic critics of the American medical profession. As chairman of the Democratic National Committee, he misused the facilities of that committee to make scurrilous, slanderous accusations against State Medical Societies and the American Medical Association. His statements and his tactics were an affront to all doctors, whether Democrats or Republicans. Now, he has gone even farther, by using the facilities of the Department of Justice for political purposes.

"For many months Mr. McGrath and some of the other Washington proponents of political medicine have cleverly and indirectly threatened the medical profession because of its open opposition to Compulsory Health Insurance. Coming events cast their shadows before. Now, with Mr. McGrath in the saddle as Attorney General, the reprisals and crack-downs are in full swing.

"This Nationwide use of Police-State methods was revealed and protested yesterday by the Board of Trustees of the American Medical Association. Mr. McGrath, in admitting the investigations, then gave the lame explanation that they resulted from complaints by doctors and the general public.

"The straight-thinking American people, believing in fair play according to democratic rules, will recognize his public excuse as camouflage. They will recognize, I am sure, that the present attack against the medical profession is a politically-inspired maneuver to frighten American doctors, discredit them in the eyes of the public and stifle opposition to the Truman health program.

"I hope and believe that the American people will rise up in protest against such Gestapo methods in a Nation which cherishes the right of free speech."

Dr. Robins called attention to the fact that Senator James W. Fulbright of Arkansas in the U. S. Senate spoke in support of the Nation's doctors and had the official AMA statement printed in the *Congressional Record.*

PNEUMONIA STILL A KILLER

Pnuemonia remains the only communicable disease among the first ten causes of death in Minnesota, according to a recent report from the Division of Vital Statistics, Minnesota Department of Health. Pneumonia now ranks fifth as a cause of death in Minnesota. In all its forms, it took a total of 1,013 lives in the state in 1948, and another 564 during the first half of the present year. However, this total represents only about 4 per cent of all deaths occurring in the state.

Except for accidents, conditions causing death today tend more and more toward a preponderance of chronic conditions and those affecting mainly older people. The five leading causes of death in Minnesota have remained the same for some time. They are heart disease, cancer, intercranial lesions of vascular origin (such as cerebral hemorrhage), and pneumonia. Next in rank after these five are diabetes, nephritis, arteriosclerosis, premature birth, and congenital malformations.

The report from the Division of Vital Statistics states that, although accidents appear in fourth place among the leading causes of death for the entire population of Minnesota, they actually are the leading cause of death among younger age groups. "During the years 1946-1948," the report states, "accidents were the leading cause of death for each age group from one to nineteen years of age, accounting for 33.5 per cent of the deaths in these ages."—*Minnesota Health,* November, 1949.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

ENGLISH SUSPECT SM END NEARING

"People are demanding prescriptions and otherwise trying to get as much as possible out of the British health scheme," reported John W. McPherrin, editor of *The American Druggist,* when he spoke before the annual conference of State Medical Association Secretaries and Editors, November 4, at AMA headquarters. "They have an intuition that the thing can't last."

McPherrin spent five weeks in England, traveling 1,600 miles with a portable wire-recording machine which he used in interviewing Bevan and other top-ranking British officials, housewives, men in the neighborhood pubs—in short, anyone and everyone who could, when considered as part of the composite whole, give him a picture of British reactions to socialized medicine.

"My attitude was that of a journalist," he explained. "My publication is not affiliated with any association."

"Not An Entity"

To find out what he wanted to know about the health program in Britain—Britishers call it the "health scheme"—McPherrin found that he could not consider it as an entity; he had to "dig into the welfare state."

He concluded that the American and British people are "pretty much alike, but the British have acquired some different habits of thinking." "These are not common to Americans and, I'm not sure that they are common to the British people."

McPherrin credited working conditions, class distinctions and the "stupid private enterprise" of Britain with bringing on the welfare state: "If those things had happened here, we might have had a welfare state."

"It (the welfare state) is not the ideology of the people," he opined, "but the competition of two political parties to see which could offer the most—at tax expense."

As to those who like it and those who don't—McPherrin found it a simple question of economics. "If the individual is making more money since the health scheme, then he's in favor of it," McPherrin declared. "With the majority of people, the first response is 'it's a good idea'; most people like to get things for free."

One Dollar a Week?

The truth about the cost of the program is not known by many people in Britain, however, McPherrin believes. The government takes a dollar a week from the British worker and leads him to believe that the money is his entire contribution for the medical and related services that he receives. Actually, five-sixths of that dollar goes for so-called "cash benefits"—including unemployment insurance, funeral expenses and the like. Seventy-eight per cent of the cost of the health scheme comes out of general taxes.

In terms of the health scheme, England can be divided into three classes now, McPherrin pointed out: the abusers, the users and the objectors.

Summarizing his analysis of the change that has come over Great Britain, Editor McPherrin said, "I came home with a new reverence for America and the faith in mankind that created this nation. Socialism, a polite word for communism, is a system founded on lack of faith in people."

HUMPHREY AMPLIFIES STAND ON HEALTH PLAN

During a November 1 radio debate on the "Town Meeting of the Air" program, Senator Hubert Humphrey amplified his new view of compulsory health insurance — a withdrawal, at least temporarily, of his support from the Truman plan.

". . . a very serious point has been brought up here tonight in reference to my stand on the so-called so-

cialized medicine. I would like to reply to my doctor friend. I am opposed to socialized medicine. Socialized medicine is charity medicine.

"I am for the general principle of national health insurance, which is a prepayment type of medicine, a prepayment insurance plan. I do not believe we should prematurely enter into it. I agree with my friend from Maine (Senator Owen Brewster); we need time to study and to think. That is exactly what we're doing. We're going to build up the medical schools of this country, which the medical profession is for—they're for federal aid on that. We're building up the hospitals, which they're for—they're for federal aid on that. We're building up the community clinics.

"When the time arrives—unless the medical profession has spread out the means of coverage for health services in this country—the American people are going to ask of their government help from their government in an insurance plan—not a pension plan, not a gift plan but an insurance plan—to provide for the medical services which the great medical profession can provide."

Senator Humphrey and Senator Brewster were debating the question: "Are we depending too much on government for general welfare?" Mr. Humphrey answered the question with what he called a "categorical 'no.'"

EWING OFFERS CASH APPEAL TO DRUGGISTS

In the current issue of *The Bulletin* of the Academy of Medicine of Toledo and Lucas County (Ohio) appears an interesting study of Oscar Ewing's recent address before the annual convention of the National Association of Retail Druggists.

The writer of the article has taken parts of Ewing's talk and italicized them for greater emphasis. Typical are these:

"In a very real sense, health is your stock in trade."

"Certainly any major progress we make in this age-old struggle against sickness and disease is sooner or later reflected in larger receipts for your own cash registers."

"And the result of this activity (mass x-ray, cancer and heart clinics), I am certain, has already been felt across your own drug counters."

"Again let me point out that the drug trade flourishes in the shadow of the hospital."

"National health insurance would automatically give to every man, woman and child the status of a 'good paying' patient. In all this I do not see how the retail druggist can fail to profit enormously."

Mr. Ewing is evidently under the impression that he can gain support for his compulsory health insurance plan by a dollars-and-cents appeal; but he has been contending, up to this point, that the American people must go into the program through motivation of a great humanitarian nature.

MEDICAL OFFICIALS TOLD TO SELL LIBERTY

"Selling Liberty, a Public Relations Project for Every American," was the subject selected by Leonard E. Read, president of the Foundation for Economic Education, when he addressed the second annual AMA Public Relations Conference November 5 at the Hotel Bismarck, Chicago.

Mr. Reed began his discussion with the assertion that socialism is "coercive collectivism."

"Regardless of its beginning," he contended, "it means state ownership and/or control of production.

"Socialism, a parasitical philosophy, presupposes the existence of healthy and going economy, just as mistletoe presupposes a healthy, live tree."

Taxes Take 29 Per Cent

Giving an indication of the parasitical approach of socialism, Read pointed out that between two and five per cent of all earned income was once the government's take; now it's 29 per cent of all earned income.

The speaker recalled the Lenin theory: that debauching its curency is the quickest way to destroy a society. Mr. Read then took examples from countries abroad where the currency has been devalued—in France, for instance, if one had deposited $1.52 cents in a bank there thirty-two years ago, he would be able to withdraw only one penny today.

"In America, the debauchery of the currency and the progress of socialism is such that we are no longer able to quit our evil ways and be all right—we're now over the brink."

Plunderbund Did It

Individuals and groups responsible for this socialistic trend, Mr. Read termed the "plunderbund," adding, "Until we have a re-learning of the proper relationship between society and the state, the plunderbund will continue to grow."

The struggle between democracy and socialism, Read referred to as "an ideological contest"—a contest in the field of explanation.

The discouraging aspects of this contest, according to the economist, are: (1) The almost all-pervasive notion that it is always "someone else" who is in need of further understanding,

(2) indifference, (3) complacency, (4) unconsciousness of the problem, (5) people who "have no time to read," (6) those persons who are so busy reaping the rewards of an economy facing destruction that they have no time to assist in its preservation.

Mr. Read's answer to the question of what to do was: "Gain a few thousand articulate, active-minded individuals who thoroughly understand the fallacies of socialism and the philosophy of a voluntary society and the trend would be reversed."

FEW HEALTH BILLS PASSED BY CONGRESS

Despite the fact that medical and hospital bills occupied a sizable space in the 80th congress' hopper, few measures of national importance received congressional approval during the session.

S.614 is regarded as the prime example of health measures, national in scope, which became law. This bill was the first comprehensive amendment of the Hill-Burton Hospital Survey and Construction Act. Extending the program until June 30, 1955, the new law authorizes $150 million in federal grants annually and makes a few changes in the method of allocating funds to the state. Under its terms, also, the U. S. Public Health Service has been delegated the task of conducting hospital utilization demonstrations and studies.

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

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Man Posing as Doctor Sentenced for Grand Larceny

Re. State of Minnesota vs. Lavern E. Bartholomew

On October 11, 1949, Lavern E. Bartholomew, age unknown, was sentenced at Rochester, Minnesota, to a term of not to exceed five years at hard labor in the State Prison at Stillwater. The sentence was imposed by Judge Vernon Gates in the District Court of Olmsted County, following the defendant's plea of guilty on September 2, 1949, to an information charging him with the crime of grand larceny in the second degree.

Bartholomew has a long criminal record, according to the Federal Bureau of Investigation. That record dates back to 1928, notwithstanding the fact that Bartholomew claims he was born in December, 1923. According to Bartholomew's signed statement, he came to Rochester, Minnesota, from Garden City, Kansas, on August 22, 1949. The following day he applied for work as an orderly at a Rochester hospital. While at the hospital Bartholomew removed two billfolds from the surgeons' lockers. He also stole $400 in cash and a wrist watch from a patient. That particular theft was the basis of the criminal charge against Bartholomew. Bartholomew left Rochester but was arrested at Kansas City, Missouri, and returned to Minnesota for prosecution.

According to the Federal Bureau of Investigation, Bartholomew, under the name of Calvin Lasky, was placed in the Boys' Industrial Home at St. Johns, New Brunswick, in August, 1928. Since that time Bartholomew, under various aliases, has been in penal institutions in New Brunswick; Montreal, Quebec; Florence, Arizona; Los Angeles, California; Boston, Massachusetts, and Calgary, Alberta. The charges against Bartholomew ranged from vagrancy to grand larceny. Bartholomew has used the following aliases: Lasky, Laskey, Carmelle and McAllister. Bartholomew's true name is unknown; his birth place, likewise, is unknown. He has been the subject of long investigation by the Federal Bureau of Immigration and also the Canadian authorities. Bartholomew is probably in his early thirties.

TRAINING OF BLIND FOR JOBS IN X-RAY DARKROOMS

A St. Louis physician, writing in the November, 1949, issue of *The American Journal of Roentgenology and Radium Therapy*, urged industrial and hospital x-ray departments today to explore more fully the possibility of training blind persons, both men and women, for permanent jobs in the darkrooms where x-ray films are processed.

The very best technique employed by x-ray specialists is "only as good as the darkroom processing of the films," Dr. Sherwood Moore, director of the Mallinckrodt Institute of Radiology of St. Louis, said in his plea for the employment of blind x-ray technicians for darkroom work.

Dr. Moore said that with the help of the St. Louis Bureau for the Blind he employed three blind men in his laboratory and after a month's training they acquired manual proficiency which justified attempting to use them under actual working conditions. "The blind men are happy," Dr. Moore wrote, adding that one of them commented "this is far better than making brooms."

"There is hope," the article said, "that the film industry and commercial photographic laboratories will take up this form of employment for those handicapped by loss of sight."

One advantage in hiring the blind, the doctor explained, is that experienced x-ray technicians "are freed from the monotony and fatigue of darkroom work, where their superior abilities are more or less wasted.

"Success in employing blind darkroom technicians depends upon the selection of suitable individuals who should be thoroughly trained in advance of embarking on the actual work. The selection should be left to the state or federal agencies for the blind. These agencies have the facilities for giving aptitude tests and finding persons with the proper background."

Dr. Moore said he found that blind employes can unload and load and place a film in solution as speedily as can a technician with sight.

"The Federal Security Agency, Office of Vocational Rehabilitation and the Illinois Division of Vocational Rehabilitation and a representative from the Bureau for the Blind have investigated this training program and expressed the view that it has possibilities for a good livelihood for the blind. It is not and should not be a method of getting cheap help.

"Such a training program may open a door for large opportunities."

In Memoriam

C. ANDERSON ALDRICH

Dr. C. Anderson Aldrich, since 1944 Director of the Rochester Child Health Institute, died October 6, 1949, at the age of sixty-one.

Dr. Aldrich was born at Plymouth, Massachusetts, March 4, 1888. He obtained his M.D. degree from Northwestern Medical School in 1915 and interned at the New York Nursery and Children's Hospital in 1915 and the Evanston Hospital in 1916. He took postgraduate work in pediatrics at the Harvard Medical School in 1921.

After practicing in Winnetka, Illinois, from 1916 to 1940, and in Chicago, from 1940 to 1944, he moved to Rochester, Minnesota, where he was Professor of Pediatrics in the Mayo Foundation and Director of the Child Health Institute conducted by the Section of Pediatrics of the Mayo Clinic. The purpose of the Institute is to watch over the health and emotional development of Rochester children from birth on, in an attempt to prevent disease. For his activities in this project, Dr. Aldrich received national recognition and the 1948 award from the Lasker Foundation of New York.

Dr. Aldrich was the author of several books, including "Cultivating a Child's Appetite" and "Babies are Human Beings." Mrs. Aldrich was a co-author of the second book.

While in Illinois, Dr. Aldrich became successively chief of staff at Children's Memorial Hospital in Chicago, consultant in pediatrics at the Chicago Municipal Tuberculosis Sanatorium, chairman of pediatrics in the department of medicine at the Evanston Hospital and a member of the faculty of Northwestern University.

Dr. Aldrich was a member of the Olmsted-Houston-Fillmore-Dodge County Medical Society, the Minnesota State and American Medical Associations.

Surviving him are his wife, a daughter, Mrs. David Rower of Northbrook, Illinois, and two sons, Dr. Robert A. Aldrich of Rochester and Dr. Stephen L. Aldrich of Chicago.

LYLE LELAND BROWN

Dr. L. L. Brown, a well-known pediatrician of Crookston, died October 11, 1949, at the age of fifty-eight.

Dr. Brown was born at Crookston, September 7, 1891. After attending the University of Minnesota, he received his medical degree from the University of Illinois Medical School in 1918. His internship was served at the Michael Reese Hospital in Chicago. After serving in the medical corps of the Army during World War I, he entered private practice in Crookston. Since 1926 he had been associated with the Northwestern Clinic of Crookston as a pediatrician.

Dr. Brown was active in civic affairs. He had been health officer of Crookston since 1928, member of Crookston park board for eleven years, and was active in local Chamber of Commerce affairs and county Red Cross activities.

He was a member of the Red River Valley Medical Society, the Minnesota State and American Medical Associations.

Dr. Brown is survived by his wife whom he married in St. Louis in 1921.

GRANT R. CHRISTENSON

Dr. Grant R. Christenson of Minneapolis died October 19, 1949, at the age of forty-eight.

Dr. Christenson was born at Starbuck, Minnesota, May 20, 1901. With his parents he moved to St. Paul in 1906. He graduated from Central High School and attended Hamline University. He graduated from the medical school of the University of Minnesota in 1931. He was a member of Phi Gamma Delta and Nu Sigma Nu fraternities, Scottish Rite Temple and Zuhrah Temple in Minneapolis. His medical society memberships included Hennepin County Medical Society, the Minnesota State Medical Association and the American Medical Association. He was an active member of the Hennepin Avenue Methodist Church.

He is survived by his wife, Virginia; two sons, Carl R. and Robert W.; two daughters, Virginia Louise and Judith Lynn; and his mother, Mrs. Nellie Grant Christenson of St. Paul.

PAUL N. JEPSON

Dr. Paul N. Jepson, former fellow of the Mayo Foundation and member of the staff of the Mayo Clinic, died October 24, 1949, in Pottstown, Pennsylvania.

Dr. Jepson was born October 12, 1893, in Faribault, Minnesota. He received the degree of M.D. in 1920 from the University of Pennsylvania and was an intern at Presbyterian Hospital, Philadelphia, from 1920 to 1921. He entered the Mayo Foundation as a fellow in orthopedic surgery on September 1, 1921. He became first assistant in orthopedic surgery on July 1, 1924, associate in orthopedic surgery, the Mayo Clinic, on October 1, 1925, and instructor in orthopedic surgery, the Mayo Foundation. He received the degree of M.S. in Orthopedic Surgery from the University of Minnesota in 1926. Dr. Jepson left the Clinic on February 1, 1927.

Dr. Jepson was a fellow of the American College of Surgeons and a member of the American Medical Association, the American Academy of Orthopaedic Surgeons and the Philadelphia Orthopedic Club.

ELIAS HOMER LOOFBOURROW

Dr. E. H. Loofbourrow, well-known physician on the Range for over forty years, died September 16, 1949. He was seventy-one years of age.

Dr. Loofbourrow was born at New Madison, Ohio,

June 2, 1878. He graduated from the Ohio Northern University at Ada, Ohio, in 1902, and obtained his medical degree from the College of Physicians and Surgeons in Chicago in 1906.

He practiced at Chisholm for about six years and at Wakefield and St. Charles for short periods before locating at Keewatin. Since his retirement in June, 1948, Dr. and Mrs. Loofbourrow had resided at Northfield.

Dr. Loofbourrow was a member of the St. Louis County Medical Society, the Minnesota State and American Medical Association, and carried on a general practice.

He is survived by his wife, a daughter, Mrs. Bernard Street of Northfield, and a son, Dr. Ralph Loofbourrow of Minneapolis.

GEORGE E. MALMGREN

Word has been received of the death of Dr. George E. Malmgren, former fellow of the Mayo Foundation, which occurred on August 24, 1949, in Los Angeles.

Dr. Malmgren was born June 6, 1902, in St. Paul, Minnesota. He received the degree of M.D. in 1927 from the University of Minnesota and was an intern at St. Mary's Hospital, Duluth, Minnesota, from April 1, 1926, to April 1, 1927. He entered the Mayo Foundation as a fellow in surgery in April, 1927, but transferred his major subject to proctology in January, 1928. He received the degree of M.S. in Proctology in 1930 from the University of Minnesota.

Dr. Malmgren left the Mayo Foundation October 1, 1931, at which time he went to Los Angeles to practice proctology. He was a member of the American Medical Association and Alpha Omega Alpha.

WILLIAM HENRY VON DER WEYER

William Henry Von der Weyer was born in Saint Paul, Minnesota, November 12, 1891, and died in his sleep July 26, 1949.

He was the son of Henry and Josephine Stathel Von der Weyer. He attended St. Francis parochial school and St. Thomas Academy, the Marquette University School of Medicine, graduating in 1915, following which he interned at St. John's Hospital, Saint Paul, being the first intern at that hospital.

In 1917 he became associated with the late Dr. Arthur J. Gillette, specializing in orthopedic surgery, and after his death, with Dr. Carl C. Chatterton until 1938. In 1948 he formed an association with Dr. Frank S. Babb which continued until his death.

Dr. Von der Weyer was a member of the Ramsey County Medical Society, the Minnesota State and American Medical Associations, the American Academy of Orthopedic Surgery, and the American College of Surgeons.

Dr. Von der Weyer married Mildred M. Esswein, October 5, 1921. He is survived by his mother, his widow, a son, William, and a daughter, Elizabeth.

"Bill," as he liked to be called, endeared himself to everyone by his modesty, his unfailing equanimity, his friendliness and his jovial disposition. He will live long in the memory of his many friends.

CARL L. LARSEN, M.D.

MALIGNANT TUMORS OF THE LUNG

(Continued from Page 1189)

was grossly recognizable in experimentally produced pulmonary cancer in rabbits, and at a stage where neither x-ray examination nor bronchoscopy could have identified the growth.

The real difficulty lies not so much with the method itself, as it does with the training and experience of the cytologist—be he a pathologist, a clinician or a biologist. Cytology has come to be an important department of clinical pathological laboratories. Dr. McDonald and his associates should be congratulated for their pioneer work in the diagnosis of pulmonary cancer by the cytologic method.

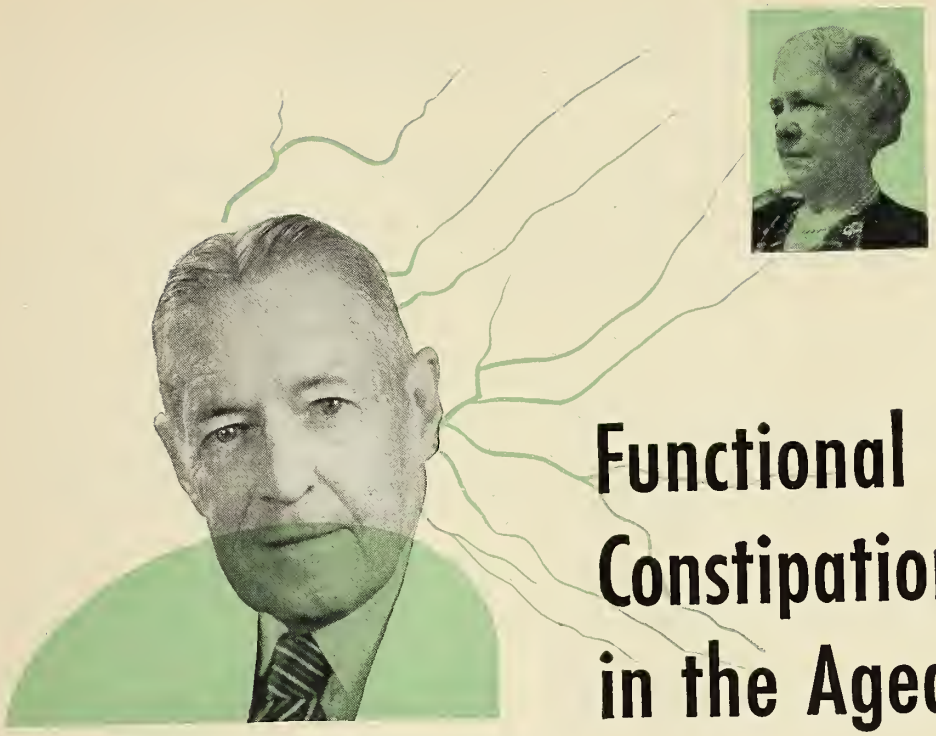
DR. DEFOREST R. HASTINGS, Minneapolis: Dr. John B. McDonald has very ably presented this paper on the cytologic examination of sputum in the diagnosis of bronchiogenic carcinoma.

Being an internist, and not a pathologist, I shall limit my discussion to the clinical phases of carcinoma of the lung. I have been especially interested in the diagnosis of this disease for the past few years, primarily because of the frequency with which it has been occurring. Perhaps we should say because it is being diagnosed more often rather than that the disease itself is occurring more often.

The diagnosis of carcinoma of the lung is difficult and often impossible without a biopsy, even though all other methods of diagnosis are used. As an illustration, a neighbor of mine came to me a few years ago, stating that he had a slight pain in the chest. After history, physical, and x-ray examinations were done, an atypical lesion was found in the lung. The roentgenologist thought it was an atypical tuberculosis. The man was very impatient, as is often the case in private practice, and wanted a diagnosis at once. He was sent to the sanatorium, and after several months was discharged as nontuberculous. The lesion remained the same. The patient did not want a lobotomy, and consequently a definite diagnosis has not been made. One year later the lesion is still the same.

Through the courtesy of the Minneapolis Health Department, and in my own work at the Public Health Center, I have had the privilege of seeing and studying many of the films taken during the x-ray survey conducted in Minneapolis in 1947. The Minneapolis Health Department has received a diagnosis on about 4,000. From this survey, 117 people were found who had carcinoma in some form, and twenty-eight with carcinoma of the lung.

In summary, carcinoma of the lung is common. The diagnosis of it is difficult, and often by the time it is made, the patient is inoperable. Even the smallest x-ray lesion resembling a tumor should have immediate attention, and all means of diagnosis used. History, physical examination, x-ray, and bronchoscopic methods have been used for some time. Now, we can definitely add cytologic examination to the armamentarium for the diagnosis of lung diseases.



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*Werner, A. A.: The Climacteric in Women and Men, Pastgrad. Med. 4:102 (Aug.) 1948.

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RESEARCH IN THE SERVICE OF MEDICINE

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✦ Reports and Announcements ✦

AMERICAN ACADEMY OF GENERAL PRACTICE

At the annual meeting of Minneapolis Chapter of the American Academy of General Practice, held at Interlachen Club, November 16, Dr. Willis L. Herbert was elected president to succeed Dr. Willis M. Duryea, and Dr. C. W. Del Plaine was elected vice president to succeed Dr. J. H. Higgins.

Dr. Alexander J. Ross was elected secretary-treasurer to succeed Dr. James A. Blake.

AMERICAN COLLEGE OF ALLERGISTS

The American College of Allergists, numbering over 1,000 physicians in North, South and Central America, as well as in England, France, Africa, Cuba and the Scandinavian countries, mostly specialists in the fields of allergy and immunology, will meet at the Hotel Jefferson, St. Louis, Missouri, January 15 to 18, 1950.

There will be forty-two addresses by well-known physicians and allergists on such subjects as "Dangers from Cosmetics," "Snake Venom in the Treatment of Chronic Urticaria," "The Relation of Allergy to Character Problems in Children," and "Marital Adjustments in Parents of Allergic Children."

The von Pirquet medal, awarded for outstanding achievement in allergy, will be presented to Dr. Paul Kallós of Hälsingborg, Sweden, by President Jonathan Forman. Vera B. Walker, chairman of the British Allergy Society, London, will be a guest speaker.

Dr. Fred W. Wittich, Minneapolis, is secretary-treasurer of the College.

ANNUAL CLINICAL CONFERENCE OF THE CHICAGO MEDICAL SOCIETY

An announcement of this year's Annual Clinical Conference of the Chicago Medical Society, marking the centennial year of the Society, appears on page 1241 of this issue. The conference is scheduled for February 28 through March 3, 1950.

The conference, in the nature of a postgraduate course, will consist of clinical sessions and lectures by the nation's foremost medical authorities and educators, and scientific and technical exhibits. Color television and black-and-white telecasts will be utilized. The dinner will highlight speakers and entertainers. Reservations should be made at the Palmer House, which will be headquarters for the meeting.

* * *

CONTINUATION COURSES

Cardiovascular Diseases.—The University of Minnesota will present a continuation course in cardiovascular diseases at the Center for Continuation Study on January 5 through 7. The course is intended for general practitioners. Dr. Tinsley Harrison, professor of medicine at Southwestern Medical College, Dallas, Texas, will act as visiting faculty member for the course. He also will present the annual Clarance M. Jackson Lecture on the evening of January 6, when his subject will be "The Evaluation of Cardiac Murmurs."

Clinical Neurology.—A course in clinical neurology will be presented at the Center for Continuation Study, University of Minnesota, January 30 to February 11. The course is particularly recommended for neurologists, psychiatrists, pediatricians, internists and neurosurgeons. Visiting faculty members will consist of Dr. Fred Mettler, Neurological Institute, Columbia University, New York; Dr. Walter Klingman, Department of Neurology, University of Virginia Hospital, Charlottesville, Virginia; Dr. Harold Voris, Neurologic Surgery, Mercy Hospital, Chicago; and Dr. Earl Walker, Neurological Surgery, Johns Hopkins University, New York.

* * *

Pediatrics.—A continuation course in Pediatrics for general physicians will be presented at the Center for Continuation Study January 26 to 28, 1950. The course will be divided into three major divisions. A short period will be devoted to the importance of hereditary and genetic factors in understanding pediatric problems. A second portion of the course will emphasize common dermatological problems seen in infants and children. Common infectious diseases will be considered in the third portion of the course. Dr. Franklin Top of the Herman Kiefer Hospital, Detroit, Michigan, will be the visiting faculty member for the course.

MINNESOTA SOCIETY OF NEUROLOGY AND PSYCHIATRY

At the annual meeting of the Minnesota Society of Neurology and Psychiatry held at the Town and Country Club, Saint Paul, November 8, 1949, the following officers were elected to serve for the coming year:

President—William L. Patterson, M.D., Fergus Falls

Vice President—Burtrum C. Schiele, M.D., Minneapolis

Secretary-Treasurer—Royal C. Gray, M.D., Minneapolis

The program for the evening included two scientific papers: "A Concept Found Useful in Teaching Psychotherapeutic Interviewing to Medical Students" (inaugural thesis) by Frank Kiesler, M.D., Minneapolis, and "Diagrammatic Presentation of the Etiology and Treatment of Mental Disorders" by N. J. Berkwitz, M.D., Minneapolis.

MISSISSIPPI VALLEY MEDICAL SOCIETY 1950 ESSAY CONTEST

The tenth annual essay contest of the Mississippi Valley Medical Society will be held in 1950. The society will offer a cash prize of $100, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest (including medical economics and education) and practical value to the general practitioner of medicine. Certificates of merit may also be granted to the physicians whose essays are

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rated second and third best. Contestants must be members of the American Medical Association who are residents and citizens of the United States. The winner will be invited to present his contribution at the fifteenth annual meeting of the Mississippi Valley Medical Society to be held in Springfield, Ill., Sept. 27, 28, 29, 1950, the society reserving the exclusive right to first publish the essay in its official publication—the *Mississippi Valley Medical Journal* (incorporating the *Radiologic Review*). All contributions shall be typewritten in English in manuscript form, submitted in five copies, not to exceed 5,000 words, and must be received not later than May 1, 1950. The winning essays in the 1949 contest appear in the January, 1959, issue of the *Mississippi Valley Medical Journal.*

Further details may be secured from Harold Swanberg, M.D., Secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Illinois.

* * *

WASHINGTON COUNTY SOCIETY

The regular monthly meeting of the Washington County Medical Society was held on November 8. The scientific part of the meeting's program consisted of a color-sound motion picture on hypothyroidism.

Woman's Auxiliary

PRESIDENT-ELECT CITES WA "POWER"

Mrs. Charles W. Waas

The power of 49 thousand well-informed women is immeasurable, judging by the marvelous enthusiasm, dynamic energy and sincerity of delegates to the State Presidents' Conference, held November 3 and 4 in Chicago.

Although the program afforded an opportunity to hear addresses by a number of prominent doctors and laymen and one particularly fine talk by a member of the Associated Women of the American Farm Bureau, the most impressive aspect of the meeting was the familiarity with current problems demonstrated by Auxiliary officers, chairmen and members.

If all Minnesota Auxiliary members could have been present, they would have agreed with the goals discussed and the methods for achieving those goals, notably: arranging for the *Bulletin,* official Auxiliary publication, to be available to every member; making sure that doctor-husbands subscribe to *Hygeia* and that each Auxiliary member presents a gift subscription to at least one nonprofessional friend or acquaintance; recognizing the importance of county Auxiliary meetings, taking into account the fact that the day of the purely social meeting is past.

Those attending were advised that there is much to be done and the time is late. It is up to every Auxiliary member to do her part, study the literature given her, keep informed, attend meetings regularly and accept special responsibilities when the need arises.

FIVE HUNDRED ATTEND HEALTH MEETING

Mrs. Walter K. Haven*

Hennepin county health problems were analyzed from the standpoints of nursing, medical service, engineering and public health education November 4 at the Community Health program, held at the Woman's Club, 410 Oak Grove street, Minneapolis, and sponsored by the Hennepin County Woman's Auxiliary.

An estimated 500 women were present to hear the discussion of county health problems, conducted by a panel which included: Miss Ann Hauser, director, Hennepin County Public Health Nursing Service; Myron Peterson, public health engineer, Minnesota Department of Health; Miss Jeannette Simmons, community health educator, Minnesota Department of Health; Dr. Clare Gates, director, Bureau of Health Information, Minnesota Health Department; Dr. A. B. Rosenfield, director,

*Public Relations chairman, Hennepin County Auxiliary.

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Health District No. six, Minnesota Department of Health; Dr. Reuben F. Erickson, chairman, Committee on Public Policy, Minnesota State Medical Association.

Dr. Mitrofan Smorszczok, displaced Polish physician who is now interning at St. Mary's hospital, Minneapolis, told the women of his experience in caring for the sick under Soviet government supervision. He was introduced by Dr. Horatio B. Sweetser, Jr.

Luncheon was followed by the showing of several health movies. Dr. R. F. McGandy, president, Hennepin County Medical society, spoke briefly and introduced the afternoon speaker, Dr. Donald W. Hastings, head of the Department of Psychiatry and Neurology, University of Minnesota. Dr. Hastings discussed "Emotions and Illness."

The meeting was concluded with "The Trials of a Doctor's Wife," a comedy presented by members of the Auxiliary.

COUNTY GROUP STUDIES SCHOOLS

The five-point basic program for improvement of school health services was studied and discussed by the Red River Valley Auxiliary when it met October 26 at the home of Mrs. J. E. Norman, Crookston.

The school health program was developed by the Minnesota Department of Health, the State Department of Education and the Minnesota State Medical Association. It includes: (1) Stripped-to-the-waist examinations, (2) examination of all children on admission as a minimum, (3) each school to have a physician serving as school medical adviser, (4) recognition of the many emotional problems that exist among the school children of today, (5) all adult school personnel to have a medical examination each year, including a chest x-ray.

Mrs. C. L. Oppegaard and Mrs. A. R. Reff led the discussion. Mrs. O. K. Behr, president, conducted the business meeting. Out-of-town members present were: Mrs. E. L. Zorn, Erskine; Mrs. George Cather, Fosston; and Mrs. M. D. Starekow, Thief River Falls.

If tuberculosis control is to reach its proper goal—the disappearance of tuberculosis from the United States—every reservoir of infection must be found and eliminated. One of the great sources of infection still remaining in this country may be found among inmates of mental institutions. Over and over again we have been told of the high rates of disease which prevail there. In 1946 there were 635,769 mental patients in the United States, and 4,247 of them died of tuberculosis. This is a rate of 668.0 per 100,000 in contrast to 36.4 for the general population. Deaths from tuberculosis in mental institutions comprised 8.3 per cent of the total deaths from tuberculosis in the United States during that year.—Robert J. Anderson, M.D., Pub. Health Rep., Jan. 7, 1949.

Of General Interest

The Council on Pharmacy and Chemistry of the American Medical Association has withdrawn its acceptance of sulfathiazole and sulfathiazole sodium. The decision was made in view of the fact that less toxic sulfonamide drugs and penicillin and streptomycin are now available. In conformity with its policy of withdrawing acceptance of a toxic drug when a less toxic but equally effective agent becomes available, the Council voted to omit sulfathiazole and sulfathiazole sodium from the 1949 edition of New and Nonofficial Remedies.

* * *

Principal speaker at a Farm Bureau meeting in Wright on October 18 was **Dr. Henry Hutchinson,** superintendent of the Moose Lake State Hospital, who discussed the hospital's mental health program.

* * *

It was announced on November 2 that **Dr. William D. Misbach** would soon begin practice in Fairmont in association with Dr. E. E. Zemke of that city. A graduate of the University of Minnesota Medical School, Dr. Misbach served his internship at Wesley Memorial Hospital, Northwestern University, Chicago. He then was called to active duty with the Navy and served at the United States Naval Hospital, St. Albans, Long Island, New York, and on the aircraft carrier, the U.S.S. Coral Sea. Following his discharge, he took postgraduate training at Midway Hospital, Saint Paul, and the University of Minnesota Hospitals.

* * *

One of the humanitarian service programs of the **American Cancer Society** is that of volunteer workers making thousands of dressings to be used by cancer patients. The cellulose filling is provided without charge by the Society, and volunteers make the dressings out of old sheets, diapers or other soft materials. They range in size from 2 by 2 inches to 8 by 12 inches. Hospitals, physicians and individuals may obtain them free by writing to a county cancer chapter or the Minnesota Division, American Cancer Society, 622 Commerce Building, Saint Paul 1.

* * *

Dr. Carlton Nelson, formerly of Minneapolis, became a member of the staff of the Worthington Clinic on November 1. A graduate of the University of Minnesota Medical School, Dr. Nelson interned at Minneapolis General Hospital. After serving with the Army during World War II, Dr. Nelson returned to Minneapolis General Hospital for three and one-half years of postgraduate training in surgery.

* * *

The marriage of Miss Martha Nordenstrom and **Dr. F. Norman Sather,** of Fosston, took place in the Hamline Methodist Church, Saint Paul, on October 1. Dr. Sather is associated in practice in Fosston with his two brothers, Dr. George A. Sather and Dr. Edgar Leland Sather.

* * *

A joint loan fund of $100,000, maintained by the **Illinois State Medical Society** and the Illinois Agricultural Association, is available to medical students and is being loaned to finance their medical education on condition that they agree to return to a rural community to practice medicine on completion of their training. Under the program, young men from rural areas who have completed premedical courses and have been approved by local farm bureaus and medical societies may borrow up to $5,000 to complete their four-year medical course and one-year internship. Many other states have followed Illinois' example since their program was announced last year.

* * *

Dr. Reta Adams, formerly of San Antonio, Texas, became a staff member of the Fergus Falls State Hospital on November 1. A graduate of the New York Medical College, Dr. Adams has been affiliated with several mental hospitals in the United States. She has also been an instructor in the National Medical College at Nanking, China, and has held a teaching position in Calcutta, India.

* * *

During the last week of October, **Dr. Jules O. Meyer** of Grand Rapids reported for duty with the Regular Army. He was temporarily assigned to the medical staff at the U. S. Disciplinary Barracks at Milwaukee, Wisconsin, pending transfer to European duty later in the winter.

Dr. Meyer began practice in Grand Rapids in 1938 and was associated with the Itasca Clinic. As a member of the Army Reserve, he was called to active duty in 1941 and served in many of the Pacific campaigns. Following the war, he returned to his medical practice in Grand Rapids. He has entered the regular Army with the rank of major.

* * *

"How National Compulsory Health Insurance Would Affect You" was the title of a talk presented by **Dr. W. D. Coventry,** Duluth, at a meeting of the Woodland Community Club in Duluth on November 3.

* * *

Frank W. Moudry, an outstanding pharmacist of Saint Paul and the state of Minnesota, was elected president of the National Association of Retail Druggists at the annual convention in New York in September. Mr. Moudry is a Minnesota product, having been born in Le Center in 1895, graduated from the College of Pharmacy of the University of Minnesota in 1915, and practiced his profession in various localities in Minnesota before establishing



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the Apothecary Shop in Saint Paul which he now owns and operates.

Mr. Moudry held several offices of responsibility before being elected president of the National Association of Retail Druggists. In 1928 he was elected president of the Minnesota State Pharmaceutical Association. He was appointed to the Minnesota State Board of Pharmacy in 1935 and has served as secretary since 1940. Last year he served as president of the National Association of Boards of Pharmacy. In 1939 he was elected executive secretary of the National Association of Retail Druggists and has served as chairman since 1942.

A banquet was given for Mr. Moudry on November 17 at the Saint Paul Hotel by pharmacists of the state and was attended by leaders of pharmacy throughout the country, as well as by members of the Minnesota Pharmaceutical Association.

* * *

The President's Letter entitled "The Defense of Ethics," which was written by **Dr. E. M. Hammes** and which appeared in the September issue of MINNESOTA MEDICINE, was reprinted in the *Mankato Free Press* on October 18. The newspaper editors commented that the letter, which explained why the state medical association had decided to allow medical advertising in newspapers, was "so clear, so explicit and so effective" that they considered it a public service to reprint it in full.

Dr. Deane W. Benton, a staff member of the Worthington Clinic, announced on November 4 that he planned to move to Minneapolis to take further training in a specialized field of medicine. Dr. Benton began practice in Worthington last spring.

* * *

At a meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago on October 14, **Dr. W. L. Benedict,** Rochester, was elected executive secretary-treasurer of the group.

* * *

It was announced on October 12 that prospects of obtaining a physician for Jeffers were improving. **Dr. J. A. Watkins,** who was completing a postgraduate short course at the University of Minnesota, had indicated that he would open his practice there if office space and living quarters were available. Residents of the city began trying to work out a plan whereby a clinic could be constructed.

* * *

Dr. Robert R. Rosenthal, Saint Paul, was the principal speaker at a meeting of the Chelsea Heights Child Psychology Study Circle in Saint Paul on October 25. Dr. Rosenthal, a practicing pediatrician and a clinical assistant professor of pediatrics at the University of Minnesota, spoke on the topic, "Prevention of Disease in Children and Prevention of Complications in Sick Children."

A physician who has completed his internship, or a graduate dentist, may be commissioned as a first lieutenant, either in the Regular Army or in the Medical or Dental Corps Reserve, and now receive **total pay and emoluments** amounting to $473.88 per month (if married or with dependents) or $458.88 per month (if single and without dependents). These figures compare with the former pay totals of $417 and $361, respectively.

A physician or dentist who has acquired sufficient professional experience, and who can meet the other requirements, may be commissioned directly as a captain or higher. A captain's pay, with emoluments, in the Medical and Dental Corps, is now $546 (with dependents) or $531 (without dependents), as against the former $462 and $426, respectively. On completion of four years of service, a captain receives regular increases at two-year intervals.

Comparable increases have been made in the higher grades, thus making the financial rewards of military service more commensurate with those of private practice.

* * *

A highlight of the meeting of the Arrowhead Society of Medical Technologists in Duluth on October 28 was a showing of colored pictures taken by **Dr. John M. Wolff** of Duluth while he was abroad.

* * *

Dr. Benjamin I. Derauf, Saint Paul, has been elected president of the Men's Garden Club of Saint Paul. Dr. Derauf, whose flower-growing specialty is delphiniums, is an official of the Men's Garden Clubs of America.

* * *

At a special meeting of the Bemidji city council on October 6, **Dr. Charles W. Vandersluis** was appointed city health officer. Dr. Vandersluis will fill the unexpired term of Dr. Sidney F. Becker, who resigned to accept a teaching fellowship at the University of Minnesota Medical School.

* * *

Dr. Curtis Johnson has become associated in practice with Dr. Walter H. Halloran and Dr. W. B. Wells in Jackson. A graduate of the University of Minnesota Medical School, Dr. Johnson served his internship at Miller Hospital, Saint Paul. He has practiced for one year at Emmanuel Hospital in Portland, Oregon.

* * *

Dr. Gosta Dohlman, professor of otolaryngology at the University of Lund, Sweden, visited Duluth in November to give a memorial lecture in tribute to the late Dr. David L. Tilderquist of Duluth. As he began his address, Dr. Dohlman presented to the St. Louis County Medical Society an heirloom in the nature of a sword which had been carried by a high officer in the Swedish medical corps in the seventeenth century, and which Dr. Dohlman had brought with him on his lecture tour of this country.

The sword was given in gratitude for the hospitality he had received in Duluth and as an act of appreciation of the fine qualities of Dr. Tilderquist. The sword was accepted by Dr. M. H. Tibbetts, president of the St. Louis County Medical Society, and will adorn the walls of the society's library in the Medical Arts Building.

It was announced on October 25 that **Dr. Jan H. Tillisch,** consultant in medicine at the Mayo Clinic, had been named a member of the board of directors of Mid-Continent Airlines, Inc.

* * *

Dr. and Mrs. Paul Kenyon, former residents of Wadena, celebrated their golden wedding anniversary at their home in Vestal, New York, on September 27. Dr. Kenyon practiced medicine in Wadena for thirty-eight years before retiring and moving away twelve years ago.

* * *

On October 21 the Madison Clinic announced that **Dr. M. M. Barr** would be associated with the clinic for the next few months. A graduate of the University of Minnesota Medical School, Dr. Barr has completed a three-year fellowship in obstetrics and gynecology at the Mayo Clinic. During his temporary stay at the Madison Clinic, Dr. Barr planned to conduct a general practice.

* * *

Dr. R. O. Sather, Crookston, journeyed to the Twin Cities in October to attend the semi-annual meeting of the Minnesota Society of Internal Medicine in Saint Paul and the annual meeting of the Minnesota Heart Association in Minneapolis.

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It was announced on October 26 that **Dr. B. J. Branton** of Willmar had been elected president of the Minnesota Public Health Association, to take office on April 1, 1950. Dr. Branton, in addition to conducting his medical practice, is also mayor of Willmar.

* * *

Ten Minnesota surgeons were received into fellowship in the **American College of Surgeons** at a meeting in Chicago on October 21. They are Dr. Frank S. Babb, Saint Paul; Dr. Edward A. Banner, Rochester; Dr. William A. Black, New Ulm; Dr. Clarence Dennis, Saint Paul; Dr. Rudolph E. Hultkrans, Minneapolis; Dr. Sim B. Lovelady, Rochester; Dr. Collin S. MacCarty, Rochester; Dr. Melvin B. Sinykin, Minneapolis; Dr. Hendrik J. Svien, Rochester, and Dr. Robert W. Utendorfer, Minneapolis.

* * *

The Cook County Graduate School of Medicine, Chicago, has announced that John W. Neal has joined the staff as comptroller and assistant registrar. Mr. Neal, a graduate of the Northwestern University School of Law, has been engaged in practice in Chicago for eleven years. He is associated with the Illinois State Medical Society as general counsel and as executive secretary of its Committee on Medical Service and Public Relations. He is the son of the late Dr. John R. Neal, who was dean of the Cook County Graduate School of Medicine at the time of his death.

* * *

"Neurosurgery" was the title of a talk presented by **Dr. Gordon J. Strewler,** Duluth, at a meeting of the St. Mary's Hospital Alumnae Association and the private duty section of the Second District, held at St. Mary's Hospital on November 2.

* * *

Among members of a Minnesota delegation attending scientific sessions at the **Menninger Foundation** in Topeka, Kansas, early in October, were Dr. M. C. Petersen, superintendent of the Rochester State Hospital; Dr. Royal C. Gray, chief of the mental health unit of the state division of public institutions; Dr. Edmund Miller of the Anoka State Hospital, and Dr. John Reitman of the Hastings State Hospital.

* * *

Dr. and Mrs. S. G. Knight were honored at a reception in Randall on November 4. A program and refreshments were provided by the many friends of the retired physician and his wife.

* * *

Formerly of Madison, **Dr. Arthur R. Andrejek** has become associated with the Henry Clinic in Milaca. Dr. Andrejek, a graduate of the University of Minnesota Medical School, served his internship at the Henry Ford Hospital in Detroit. He then took some postgraduate training in obstetrics at Florence Crittenton Hospital, Detroit, before moving to Madison where he was affiliated with the Madison Clinic for two years.

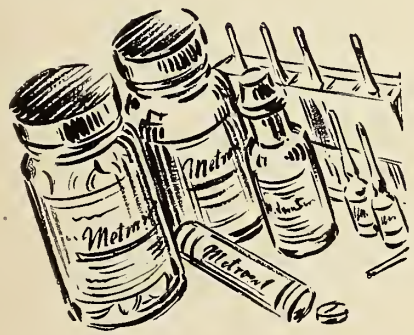
* * *

The Minnesota Heart Association held an all-day meeting on November 12 in the Founders Room of the Duluth Clinic. The program consisted of a pre-

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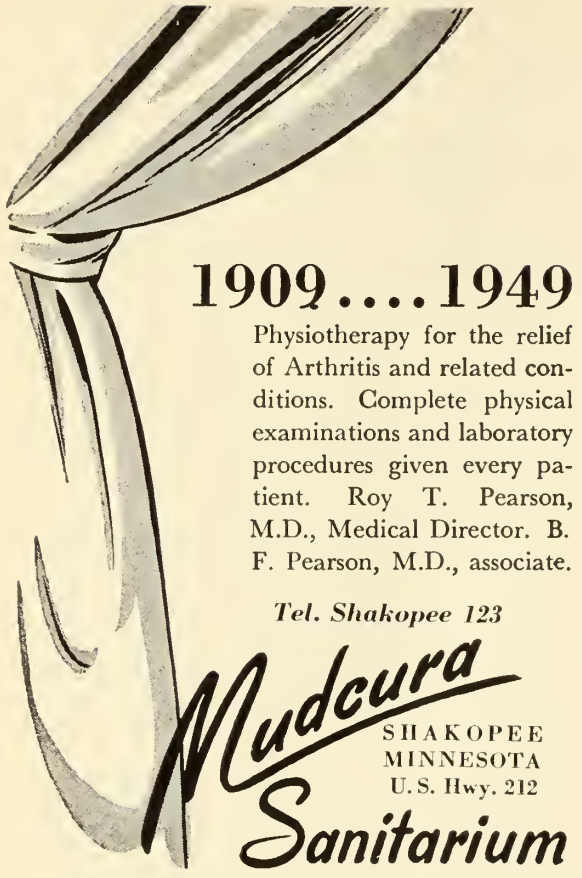
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sentation of cases and results of experimental investigations in the cardiac field.

* * *

Among the 1,457 Regular Army officers in the **Army Medical Corps** as of September 30, there were 160, or just a shade under 11 per cent, who were certified by American specialty boards, according to figures released by the Office of the Surgeon General. Represented in the ranks of the uniformed physicians and surgeons were eighteen specialties. The Army is seeking additional certified men in all eighteen specialties, as well as in allergy, cardiology, gastroenterology, and pulmonary diseases.

* * *

A clinic building will be the next new structure to be erected in the business district of Blackduck. **Dr. H. A. Palmer** of Blackduck ordered construction work to start on his building in October, and he expects the clinic to be completed next spring. The one-story modern structure will house a waiting room, a business office, physician's office, two examining rooms, laboratory, x-ray and darkroom, a utility room, and a dental suite.

* * *

Dr. Joseph Twidwell, recently associated with Dr. Frank E. Mork and Dr. A. Harold Mork in Anoka, has become affiliated with Dr. A. A. Zierold and Dr. D. J. Moos, with offices in the Medical Arts Building in Minneapolis.

* * *

Principal speaker at the annual dinner meeting of the Rice County Public Health Nursing Service, held in Faribault on November 9, was **Dr. Viktor O. Wilson,** city health officer of Rochester and director of District 3, Minnesota Department of Health. Dr. Wilson discussed the subject, "Community Health."

* * *

Thirty suburban Hennepin County Christmas Seal chairmen, meeting in Minneapolis on November 4, preparatory to launching the annual seal campaign, heard **Dr. Mario Fischer,** Duluth public health director, speak on "Milestones in Tuberculosis Control."

* * *

Dr. C. G. Uhley, Crookston, attended a special conference in Lansing, Michigan, on October 11, as a delegate of the Minnesota Division, American Cancer Society. The conference was held to discuss the Hillsdale Plan, a cancer detection plan being tested in Hillsdale, Michigan. Dr. Uhley is chairman of the Service Committee of the Minnesota Division, American Cancer Society, and is a member of the board of directors.

* * *

An exhibit on tumors of the lung won a certificate of merit for four **Mayo Clinic** staff members at a meeting of the American Roentgen Ray Society in Cincinnati in October. The four men honored were Dr. C. A. Good, Dr. J. R. McDonald, Dr. L. B. Woolner and Dr. A. H. Bulbulian.

* * *

Problems that would be presented by an **atomic bomb attack** were discussed at a convention in Minneapolis on October 7, attended by medical officers and enlisted men from Army, Navy and Air Force organized reserves. The convention was sponsored by the 804th Hospital Center, Colonel Edward P. Burch, Saint Paul, commanding officer.

Lt. Colonel Hanns C. Schwyzer, commanding officer of the 900th Mobile Army Surgical Hospital, assisted in the planning of the program. Included in the program were motion pictures on the nature of the atomic bomb, based on the Bikini test; a talk on the use of radioactive drugs in medicine, presented by Dr. Harry Z. Mellins, University of Minnesota; and a discussion of antibiotics by Dr. Wesley W. Spink, professor of medicine at the University of Minnesota.

* * *

Dr. A. S. Midthune, formerly of Borup, has opened offices for the practice of medicine in Lake Park. A graduate of the University of Minnesota Medical School, Dr. Midthune recently completed two years of service in the Army.

* * *

At the sixth session of a **medical postgraduate seminar** in Bemidji on November 1, Dr. John F. Briggs, clinical assistant professor of medicine at the University of Minnesota, discussed the treatment of

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heart disease. Dr. William C. Bernstein, clinical instructor in surgery at the University of Minnesota, spoke on "Cancer of the Rectum and Anus." The session was part of a seminar consisting of eight consecutive weekly meetings, sponsored by the University of Minnesota Medical School, the Minnesota State Medical Association, and the Minnesota Department of Health.

* * *

Dr. Louis A. Buie, Rochester, has been elected secretary-general of the American Board of Proctology, a new organization approved by the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals of the American Medical Association. The principal duty of the board is to certify physicians and surgeons who are qualified to practice in the specialty of proctology.

* * *

A former staff member of the Norwich, Connecticut, State Hospital, **Dr. Leo Whitehill** has joined the staff of the Anoka State Hospital, it was announced on November 3.

* * *

At a meeting of the Minneapolis branch of the American Association of University Women on October 10, members heard the first of three scheduled talks on national health insurance, with **Dr. Max Seham** of Minneapolis speaking in favor of compulsory health insurance.

Dr. Phebe Pearsall Block, a former Virginia physician and a sister of Dr. Robert P. Pearsall, Virginia city health officer, has been named the outstanding general practitioner for 1949-50 in Rock County, Illinois, by the Rock Island County Medical Society.

A graduate of the University of Minnesota Medical School in 1913, Dr. Block served her internship at the University Hospitals. When her brother, Dr. Robert Pearsall, entered military service in World War I, Dr. Block moved to Aurora to take charge of his practice. Later she opened a practice in Virginia. In 1928 she moved to Illinois, where she has since practiced.

* * *

Fifty members of the **International Society of Surgery** arrived in Rochester on October 24 for a three-day tour of inspection of the local medical facilities. The tour included visits to the Mayo Clinic and the Rochester hospitals, an honor dinner, and a scientific program presented by Mayo Clinic staff members.

* * *

Dr. Edward C. Maeder, Minneapolis, spoke on "Office Gynecology" at a meeting of the Barron-Washburn-Burnett Counties Medical Society at Rice Lake, Wisconsin, on November 8.

* * *

Carlton obtained a full-time physician on November 1, when **Dr. E. A. Pasek** opened offices there for

the practice of medicine. Dr. Pasek previously had been practicing with his brother, Dr. A. W. Pasek, in Cloquet.

* * *

The American Filipino Medical Aid Association has been organized to help provide medical and surgical supplies for the Filipinos. The aftermath of war has left a crying need there for medical aid. The association has been incorporated in Minnesota, with headquarters at Room 200, City Hall, Rochester, Minnesota. Contributions in the form of money, drugs or surgical instruments may be sent to the Rochester address. Checks for annual dues or contributions should be made out to the American Filipino Medical Aid Association. Such sums are deductible for income tax purposes.

* * *

Principal speaker at a meeting of the Blue Earth Valley Medical Society in Blue Earth on September 29 was **Dr. Robert Green** of the University of Minnesota. Dr. Green spoke on "Coronary Thrombosis."

* * *

Dr. Robert W. Keyes, formerly of Hastings, became a staff member of the Shipman Hospital in Ely on October 3, it was recently announced by Dr. J. P. Grahek and Dr. H. N. Sutherland of the hospital. A graduate of the University of Minnesota, Dr. Keyes served his internship at Mercy Hospital, Loyola University Clinic. He later took postgraduate training at Mercy Hospital, Janesville, Wisconsin. During the past year Dr. Keyes practiced in Hastings.

* * *

At a meeting of the Exchange Club in Duluth on October 26, **Dr. Reno W. Backus,** associate medical director of Nopeming Sanatorium and director of mobile x-ray surveys, stated that St. Louis County's record in tuberculosis control had favorably improved but still had a long way to go to compare with many Minnesota counties.

Dr. Backus said that the death rate from tuberculosis had dropped from about 120 per 100,000 in 1920 in St. Louis County to 20.5 per 100,000 in 1948. He pointed out that mass x-ray surveys had been very instrumental in reducing the rate, since in 1943, the year the first x-ray survey was begun in the county, the rate was about 40 deaths per 100,000.

"But," added Dr. Backus, "we're still just in the middle of the 'respectable' group of Minnesota counties." He urged full co-operation of Duluth residents in the x-ray resurvey of Duluth which was slated to begin about January 15, 1950.

* * *

Dr. Arthur A. Zierold, Minneapolis, was named a member of the International Society of Surgery at a meeting of the organization in New Orleans early in October.

* * *

As guest speaker at the annual dinner meeting of the McLeod County Public Health Association on October 27, **Dr. Paul F. Dwan,** Minneapolis, discussed "The Public Health Aspect of Rheumatic Fever" and presented a motion picture entitled "We Saw Them Through." Dr. Dwan is an associate professor of pediatrics at the University of Minnesota Medical School and chief cardiac clinician of the rheumatic fever program.

* * *

It was announced on October 20 that **Dr. Edward Zupanc,** who was completing a fellowship in pediatrics at the University of Wisconsin General Hospital, had been offered an opportunity to study for one year at the Royal Hospital for Sick Children at the University of Edinburgh, Scotland. A graduate of the University of Minnesota Medical School in 1946, Dr. Zupanc served his internship in a Duluth hospital. It was not known whether he would accept the offer, but it had been stated that he might begin practice in Duluth early in 1950.

* * *

Dr. Cleon R. Holland, a former Rochester resident, has opened offices for the general practice of medicine in Rochester, it was announced on October 28. A graduate of Hahnemann Medical College in 1940, Dr. Holland interned at Swedish Hospital, Minneapolis. He served in the Army from 1941 through 1945, being stationed in Alaska and the Aleutian Islands for two and one-half years. After completing a residency in medicine at Ancker Hospital, Saint Paul, Dr. Holland did research work and was a teaching assistant in the physiology department at

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$15,000.00 accidental death *$75.00 weekly indemnity, accident and sickness*	**$24.00** *Quarterly*
$20,000.00 accidental death *$100.00 weekly indemnity, accident and sickness*	**$32.00** *Quarterly*

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the University of Minnesota. Last spring he practiced for a short time in Plainview for Dr. R. A. Glabe.

* * *

At the annual dinner meeting of the board and auxiliary committees of the Jackson County Public Health Nursing Service, held in Jackson on October 18, **Dr. Paul C. Benton,** instructor at the University of Minnesota, presented a talk on "Mental Health."

* * *

Through the association in practice of three local physicians, it was announced on November 3, the communities of **Glenwood and Lowry** acquired a combination clinic, with offices in both communities. The three physicians constituting the clinic staff are Dr. B. A. McIver, Lowry, and Dr. Edward M. Elsey and Dr. M. K. Plasha, both of Glenwood. According to plans at the time of the announcement, Dr. Elsey would remain in Glenwood all of the time, Dr. McIver would spend three afternoons each week in Glenwood, and Dr. Plasha would alternate between the two communities, mornings in one and afternoons in the other.

* * *

The second annual **Medical Public Relations Conference,** sponsored by the Public Relations Department of the American Medical Association, was held in Chicago on November 5 and 6. Attending were physicians from all parts of the country who are charged with the responsibility of interpreting the profession and its problems to the general public. The afternoon session on November 5, which covered state society public relations projects, was presided over by Dr. A. E. Cardle, Saint Paul, chairman of the Health Education Committee, Minnesota State Medical Association.

* * *

The Rochester Child Health Institute, established in newly completed quarters, held an open house for the public on November 3 and 4. Of primary interest to visitors was the large playroom furnished like a child's dream house and equipped at one end with a one-way-vision glassed partition for use in observing children at play.

Incorporated in January, 1948, with its purpose to study and contribute to the health and welfare of Rochester children, the nonprofit institute receives grants-in-aid from the Mayo Foundation, the Public Health Service, the Marshall-Field Foundation and the Mead-Johnson Company. Among the staff members of the institute are Dr. Lloyd E. Harris, assistant director, and Dr. Benjamin Spock, in charge of preventive psychiatry.

* * *

Dr. Harold S. Diehl, dean of medical sciences at the University of Minnesota, left on November 21 for Great Britain where he and two other medical school deans were to make a one-month to six-week study of England's nationalized medical service. The study, which was being made at the request of the trustees and Council on Education and Hospitals of the AMA, was to determine the effects of nationalized



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* * *

The 23,000 members of the **New York State Medical Society** have assessed themselves $12 each to provide a scholarship fund for the college or professional school education of the children of the thirty-four members who died in World War II. It is estimated that the fund will remain in operation until 1972 and will entail a total expenditure of $328,000.

* * *

Public Health Service grants of $2,174,900 for the construction of cancer research facilities in fourteen hospitals, universities and other institutions were announced on November 17 by Oscar R. Ewing, Federal Security Administrator. These awards were made by the National Cancer Institute, following recommendations of the National Advisory Cancer Council and approval by Surgeon General Leonard A. Scheele of the Public Health Service.

Dr. Scheele pointed out that the grants have been made primarily to institutions closely affiliated with medical schools.

The sum of the National Cancer Institute construction grants since 1947, when Congress made the first appropriation for this purpose, has been sizable —$15,728,000.

* * *

In addition to the speakers reported in the November issue as participating in the seminar on infantile paralysis sponsored by the **Elizabeth Kenny Foundation** in Minneapolis on October 3 to 5, the following physicians took part in the program: Dr. E. J. Huenekens, Minneapolis; Dr. Wallace H. Cole, Saint Paul; Dr. John F. Pohl, Minneapolis; Dr. Gilbert Dalldorf, Albany, New York; Dr. Marvin A. Stevens, New Jersey Medical Center, Jersey City, New Jersey; and Dr. Sidney Sideman, Chicago.

* * *

Dr. Russell J. Moe of Duluth was chosen president-elect of the Central Association of Obstetricians and Gynecologists at the annual meeting of the association in Oklahoma City, November 3 to 5.

* * *

Among those in attendance at the regional meeting of the American College of Physicians, held in Indianapolis, Indiana, on November 19, was **Dr. Clyde A. Undine** of Minneapolis.

* * *

A plaque for distinguished service in the field of tuberculosis control was presented to **J. Arthur Myers, M.D.**, professor of medicine, preventive medicine and public health at the University of Minnesota, at the annual Christmas Seal dinner, October 25, at Coffman Memorial Union, University of Minnesota.

The award was made on the occasion of the publication of Dr. Myers' latest book, "Invited and Conquered," a history of tuberculosis in Minnesota.

Dr. Myers is a past president of the National Tuberculosis Association, Mississippi Valley Conference on Tuberculosis, American College of Chest Physicians, and the Minnesota Public Health Association. He is editor-in-chief of the official publication of the American College of Chest Physicians, "Diseases of the Chest," and a member of the editorial board of the "American Review of Tuberculosis."

* * *

The AMA Board of Trustees, meeting in Chicago, November 5, authorized the Bureau of Medical Economic Research to undertake a **study of physicians' incomes** during 1949. The study will be undertaken in co-operation with the Office of Business Economics of the U. S. Department of Commerce and will begin sometime next spring.

The sample study will be of the mail-questionnaire type and will be prepared jointly by the Bureau of Medical Economic Research and the Department of Commerce. The sample will be drawn from the Bureau's complete punch-card file of physicians. The questionnaires will be confined principally to questions of income and those necessary to cross-classify the respondents. The physician will not sign his questionnaire.

* * *

It was announced on November 10 that **Dr. John E. Verby, Jr.**, formerly of Saint Paul, had purchased the practice of the late Dr. V. J. Telford in Litchfield and would begin practice there on November 14. A graduate of the University of Minnesota Medical School in 1949, Dr. Verby had been practicing in Cannon Falls.

HOSPITAL NEWS

Construction of a new neurologic unit at **Glenwood Hills Hospitals**, Minneapolis, has been announced by the board of trustees.

The $175,000 unit, which is expected to be ready for service by January 1, will be the only non-governmental center devoted exclusively to the diagnosis, treatment and retraining of patients with neurologic disabilities in the Upper Midwest. It will have facilities for the evaluation and treatment of hemiplegic patients, multiple sclerosis, convulsive disorders, speech disorders, paraplegia and other paralysis, and ataxias.

Staffed by a large number of neurologists, neurosurgeons and therapy technicians, the neurologic center of Glenwood Hills Hospitals plans to make available a program of total neurologic and rehabilitative treatment which can result in the discharge of about 75 per cent of chronic neurologic patients.

The neurologic unit will occupy a modern-designed addition to the main Glenwood Hills building at 3501 Golden Valley Road, Minneapolis.

* * *

Lutheran Deaconess Home and Hospital, Minneapolis, celebrated its sixtieth anniversary on October 23 by dedicating two new floors that have been added to the hospital since the war. Two special Sunday services marked the event. The two additional floors, which were constructed at a cost of more than $300,000, increase the facilities at Deaconess Hospital so that 160 adults and 40 child patients can now be accommodated.

* * *

Amendments to Hill-Burton Act.—The prospects for new hospitals and for important research leading to improved services in existing hospitals have been materially enhanced by amendments to the Hospital Survey and Construction Act. The amendments, doubling the amount of federal funds which will be made available to the states under the Hill-Burton Act of 1946, and liberalizing the amount of the federal contributions, became effective October 25 when they were signed by President Truman.

Under the terms of the new legislation, the amount of federal grants to the states is increased from 75 to 150 million dollars annually, and the period during which allotments can be made is extended from June 30, 1950, to June 30, 1955. In addition, a new formula has been developed which permits a federal contribution ranging up to 66.6 per cent of the total construction costs for new hospitals, as against a contribution of 33.3 per cent under the original law.

The new legislation provided also for federal grants totaling $1,200,000 a year for five years for a research program looking toward co-ordination and improvement of hospital services.



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The national hospital construction program is administered by the Public Health Service of the Federal Security Agency.

Surgeon General Leonard A. Scheele has pointed out that as of October 1, 1949, 954 hospital projects have been approved, approximately 400 are under construction, while fifty have been completed and are open. The majority are small general hospitals of fifty-bed or less capacity, located in small towns or rural areas. Approximately 37,000 beds will be provided for by this construction, or 4 per cent of the total need, which has been estimated at 900,000 additional beds, the Surgeon General stated.

Under the provisions of the amendments, the Public Health Service is authorized to make grants for additional studies to the states, medical schools, regional hospital councils, and similar private nonprofit institutions in an expanded research program. These studies may include such projects as the establishment of rotating internships, refresher courses for physicians, clinical conferences, and provisions for common use of diagnostic facilities and equipment, all of which will be of aid to smaller hospitals.

* * *

It was announced on November 4 that work on the **Carlton Community Hospital** would be resumed immediately, since approval of the floor plans had at last been granted by the Minnesota Board of Health. Approval had been withheld pending revision of some of the floor plans to conform with state sanitary and safety standards.

* * *

More than $50,000 has been pledged by Crookston physicians to the **Bethesda Hospital Building Fund,** it was announced on October 26. The contributions of the physicians will amount to more than one-sixth of the $300,000 which is being sought to construct an addition to Bethesda Hospital in Crookston, Solicitation of physicians was conducted voluntarily by agreement among themselves. Results in the general campaign were not available at the time the announcement was made.

* * *

Cornerstone-laying ceremonies for the **Blue Earth Community Memorial Hospital** were held on October 17, with Dr. Charles W. Mayo of Rochester as the principal speaker. The $450,000 structure, then in an advanced stage of construction, was expected to be completely enclosed before the onset of winter. When completed, the hospital will be a three-story building of reinforced concrete and brick, with facilities for thirty-two beds.

* * *

Even strict bed-rest doesn't keep patients at **Glen Lake Sanatorium** from exercising a "nose for news." Many of the patients, though confined to bed, still serve as reporters for *Terrace Topics,* a monthly news magazine published by the sanatorium patients.

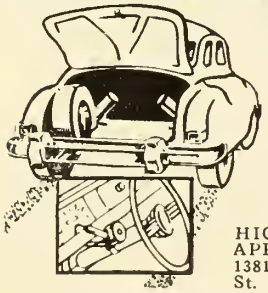
Eight hundred copies of the magazine are issued each month—varying in size from sixteen to sixty pages and covering general news stories about the hospital, poetry, book reviews and gossip. The reportorial staff, made up entirely of patients, fluctuates with each edition to give everyone an opportunity to contribute. Advertising for the publication is sold by telephone, and printing is handled by a Minneapolis firm.

BLUE CROSS-BLUE SHIELD NEWS

One person out of every two families protected by Blue Cross and Blue Shield used hospital and doctor care during the first nine months of this year. Doctors received $797,517 for care to Blue Shield subscribers, and hospitals received $6,228,952 for care to Blue Cross subscribers.

In September alone, Blue Shield claims totaled 3,219 —nearly twice the number of claims paid during the entire first nine months of 1948 when Blue Shield claims totaled 1,881. Doctors received $120,823.23 in Blue Shield payments during September.

During the first nine months of this year participating doctors provided services for 94 per cent of the claims, and non-participating doctors for 6 per cent. Unlimited or low-income subscribers represented 20.4 per cent of the total cases, and limited or higher-income subscribers represented 79.6 per cent. Of the total cases, 35.6 per cent were medical, 49.4 per cent surgical, 4.8 per cent obstetrical, 5.4 per cent x-ray and the balance were for

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assisting, after care, endoscopy and anesthesia totaling 4.8 per cent.

Of the total $6,228,952 Blue Cross benefits to subscribers during the first nine months of this year, over $5,300,000 was paid to hospitals for care of family subscribers.

From January through June, this year, families enrolled under the Blue Cross "Family A," $5.00 room allowance contracts used hospital benefits amounting to 99 cents out of every dollar they paid into the Blue Cross plan.

These are facts which made an increase in rate for this family Blue Cross contract unavoidable. The increase, which amounts to 25 cents a month, will go into effect January 1, 1950.

This increase is in direct proportion to the increase in utilization for this "Family A" group over the 1948 utilization figure, and amounts to 9 per cent. It affects only those subscribers who carry the "Family A," $5.00 a day room allowance contracts.

The only alternative to the price increase was a decrease in benefits. Greater, not lesser hospital and doctor care benefits are needed today with the increased cost of medical care. The slight 9 per cent increase will enable the Blue Cross plan to continue to give subscribers liberal benefits, and continue to be financially sound.

It is only because Blue Cross and Blue Shield are non-profit, community plans that they can offer such broad service benefits. Hospitals and doctors working together with employers and employes in a non-profit plan, designed to benefit the entire community, make such benefits possible.

As of September 30, 1949, close to a million persons (954,507) in Minnesota subscribed to Blue Cross, and 228,956 persons in Minnesota subscribed to Blue Shield.

Nationally, there are now 75 Blue Shield Plans with an enrollment of 11,000,000.

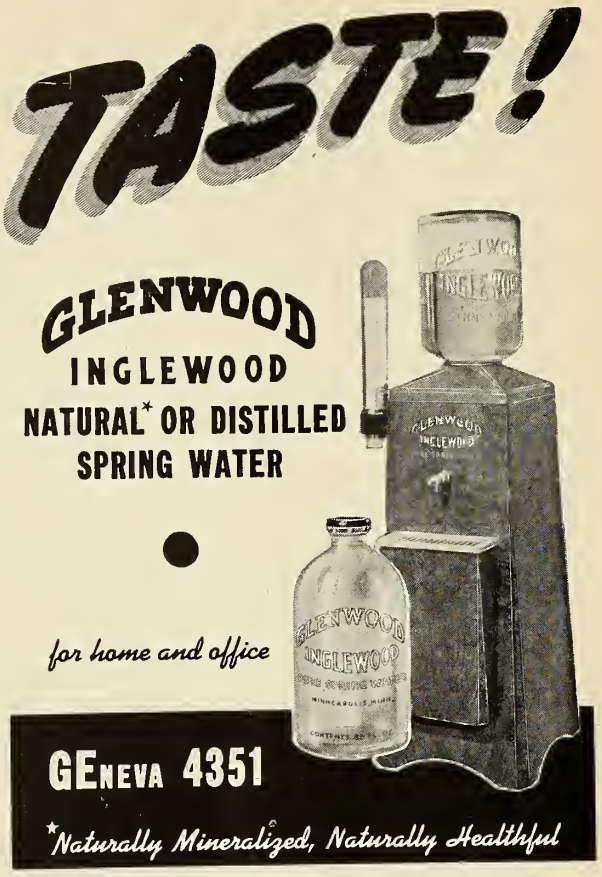
Over 35,000,000 persons in the nation now subscribe to Blue Cross. This is more than half of the 61,000,000 reported by the Health Insurance Council as having voluntary insurance against hospital expense.

During the month of October, 18 additional doctors enrolled as participating doctors in the Minnesota Blue Shield plan, bringing the total of participating doctors to 2554 as of October 31, 1949.

Doctors in private practice who are not participating doctors in the Blue Shield plan are requested to enroll. Write Minnesota Medical Service, Inc., 2388 University Avenue, St. Paul, for information.

During the month of October the Board of Directors authorized an additional $22,500 to be paid to doctors holding notes for funds lent to the Blue Shield plan. Doctors whose names were drawn by lot were notified of redemption of their notes.

Doctors are again requested to send in their claims as early as possible after a patient's case is completed. Claims on all outstanding Blue Shield cases should be submitted to the Blue Shield office prior to January 1, 1950, if possible.



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To the Editor:

There have been many inquiries recently regarding the arrangements for covering the cost of care for poliomyelitis patients. There are a number of factors which will be of interest to your readers.

During 1949 a poliomyelitis incidence of unprecedented size (more than 37,000 stricken since January 1) has put serious financial strain upon the National Foundation for Infantile Paralysis. For the first time in its eleven-year history it was necessary to conduct a Polio Epidemic Emergency Drive which although very helpful did not entirely meet current needs.

In its avowed purpose to lead, direct, and unify the national fight against infantile paralysis the National Foundation undertook support of research and education, for in these areas lie the ultimate hope for eradication of poliomyelitis. These programs are not to be compromised in any way.

The greatest cost to the National Foundation, however, is payment for medical care to patients. It is urgent for all physicians to assist in the institution of measures which will reduce costs without prejudice to patients. The chief costs are for hospitalization. Many poliomyelitis patients are hospitalized when they can be cared for at home at a reduced cost.

Our experience in this year's epidemic which has spared virtually no part of the country suggests the following:

1. Abortive, nonparalytic and mildly paralytic poliomyelitis patients are being hospitalized in the mistaken idea that the stated period of isolation must be spent in the hospital.

2. Overly prolonged hospitalization is frequent. This is particularly true of the paralytic patient who has achieved maximum improvement from daily physical therapy. Home care with periodic office or clinic visits is then in order.

3. There still exists in some places a general attitude that poliomyelitis is a bizzare disease which only a few physicians can manage. This is not so. It is disturbing, for example, to find physicians leaning so heavily upon the guidance of physical therapists and nurses. The physician's assessment of the total patient is the best index in determining when a patient shall leave the hospital to receive home, office or clinical care.

4. Patients hospitalized on general ward services are not charged medical fees ordinarily. When patients are hospitalized on isolation wards for poliomyelitis, however, bills for medical fees are at times submitted. Payment is frequently made by the local chapters of the National Foundation whose treasuries are now generally depleted.

It is hoped that your readers will understand clearly how urgent is our need for co-operation from all practicing physicians in the matters mentioned above.

Sincerely yours,

HART E. VAN RIPER, M.D.
Medical Director,
National Foundation for Infantile Paralysis

In 1948 the Federal Government collected 74 per cent of the total taxes collected. State and local governments collected 26 per cent of the total.

Of the 40 billion dollars collected by the Federal Government in 1948, 5.5 billions were returned to the states. The percentage returned varied from 3 per cent in Delaware to 96 per cent in Mississippi. In Minnesota, $124,051,188 of the $706,239,359 collected by the Federal Government was returned to the state.

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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

ALLERGY IN RELATION TO OTOLARYNGOLOGY. French K. Hansel, M.D., M.S., F.A.C.A. Editor-in-Chief, Annals of Allergy; Director of the Hansel Foundation; Associate Professor of Otolaryngology, Washington University School of Medicine. 77 pages. Price, $2.50, cloth. Saint Paul: Bruce Publishing Company, 1949.

X-RAY TREATMENT—Its Origin, Birth and Early History. Emil H. Grubbé, B.S., M.D., F.A.C.P. Charter member and emeritus member of the Radiological Society of North America; charter member of the American Roentgen Ray Society; Diplomate of the American Board of Radiology; Associate Fellow of the American Medical Association; emeritus member of the Illinois State Medical Society, and a member of the Chicago Medical Society, 154 Pages. Illus. Price $3.00, cloth. Saint Paul: Bruce Publishing Company, 1949.

FOR THE NEW MOTHER. Mildred V. Hardcastle, R.N. 163 pages. Illus. Price $2.00, cloth. Philadelphia; John C. Winston Co., 1948.

PRESENT CONCEPTS OF REHABILITATION IN TUBERCULOSIS. A review of the literature, 1938-1947. Norvin C. Kiefer, M.D., M.P.H., Senior Surgeon, United States Public Health Service; Assistant to the Chief, Tuberculosis Control Division, U.S.P.H. Service. 398 Pages. Price $3.50. National Tuberculosis Association, 1948.

This book consists of three parts, the first 260 pages consist of a review of the literature on rehabilitation, 1938 to 1947. This momentous task carries with it the usual shortcomings of such reviews in that probably some of this literature wasn't worth reviewing and, when presented in short abstracts, has little meaning for the reader.

The second part, a chapter called the Future of the Rehabilitation Program, which consists of the author's own ideas of the problem of rehabilitation. This is an excellent summary and reading of it is recommended to all physicians, particularly those interested in tuberculosis. Dr. Kiefer has stressed the importance of the physician assuming the leadership of rehabilitation program. At present large sums of money and numerous agencies are at work on the problem and a lack of proper leadership is quite evident. There is a definite tendency of the physician to isolate himself from the problem, but such should not be, for his position is such that for any degree of success the leadership must come from him. The author has very well summarized the present knowledge of this complex problem and points the direction to lead us from our present confused ignorance to much firmer ground.

The third part of the book consists of a bibliography of some one thousand references, which with part one is useful as reference material.

ROBERT E. LANE, M.D.

PHYSICIAN'S HANDBOOK, John Warkentin, Ph.D., M.D., and Jack D. Lange, M.S., M.D. 5th ed. Price $2.00. 294 p. Lithographed. Spiral Binding. Palo Alto, Calif.: University Medical Publishers, 1948.

As the title suggests, this book is a handbook, easily fitting the intern's pocket or sliding into a desk drawer.

In this small volume are recorded laboratory diagnostic procedures and normal values. Part II of the Handbook covers almost too much territory, including such items as normal obstetrical measurements, antidotes for poisons, and autopsy procedures. However, Part I alone, entitled "Laboratory Diagnosis," merits the purchase of this book.

BURTIS J. MEARS, M.D.

MEDICINE OF THE YEAR. John B. Youmans, M.D. (Editor), Dean, College of Medicine, University of Illinois. 143 pages. Price $5.00, cloth. Philadelphia: J. B. Lippincott Co., 1949.

This book is a readable and brief review of the newer developments in the various fields of medicine during the past year.

It is divided into four large sections consisting of Internal Medicine, Surgery, Obstetrics and Pediatrics. Internal Medicine and Surgery are further subdivided into various chapters such as allergy, cardiovascular dis-

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GYNECOLOGY—Intensive Course, two weeks, starting February 20. Vaginal Approach to Pelvic Surgery, one week, starting March 6.
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MEDICINE—Intensive General Course, two weeks, starting April 24. Gastroscopy, two weeks, starting March 6.
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eases, urology, fractures, et cetera. Each chapter is reviewed by leading contributors from various parts of the country.

The material presented is a narrative description of what has transpired and its significance written in a most concise manner.

The sections on internal medicine and endocrinology are especially well done. The chapter on cardiovascular diseases made no mention of recent developments in cardiac catheterizations or anticoagulant therapy.

The reviewer recommends this book to the physician as an aid to help keep him informed of medical progress.

J.T.M.

SYMPOSIA ON NUTRITION OF THE ROBERT GOULD RESEARCH FOUNDATION. Vol. 1—NUTRITIONAL ANEMIA. Edited by Arthur Lejwa. 194 pages. Distributed without cost to individuals and organizations interested in nutritional problems. Cincinnati: Robert Gould Research Foundation, Inc., 1947.

This little book of 194 pages is worth while reading for anyone interested in recent research in the anemias. It is composed of ten papers by well-known specialists presenting various aspects of their particular fields of research. The chemical, physiological and clinical phases of nutritional anemias are stressed.

The symposium was held in Cincinnati in October, 1947, under the auspices of the College of Medicine of the University of Cincinnati. The papers dealt with work published in 1946, or at an earlier date. Therefore, the later work on Vitamin B-12 is not included. A paper by Maxwell M. Winthrop on the "Physiological Implications of the Anemic State" is followed by two papers on "Folic Acid, Physiology and Use in Nutritional Anemias." An interesting paper on "Megaloblastic Anemia in Infancy" by Wolf M. Zuelzer, is particularly well written. The topic of "Iron Deficiency Anemias" and the "Biochemical and Physiological Aspects of Iron Metabolism" occupy four short papers. Finally, there are two papers on the "Vitamin B Complex and Anemia" and "Vitamin C and Anemia."

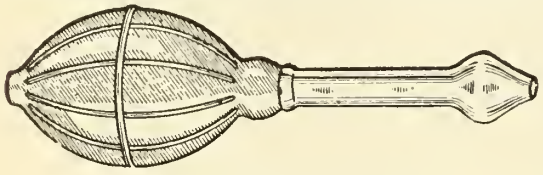
BEN SOMMERS, M.D.

THE BATTLE OF THE CONSCIENCE. A Psychiatric Study of the Inner Working of the Conscience. Edmund Bergler, M.D. 296 pages. Price $3.75, cloth. Washington, D. C.; Washington Institute of Medicine, 1948.

In this complex work, Bergler has attempted to give a Freudian conception of a difficult subject, the formation of the consicence. As might be expected from the pen of such a distinguished and learned man, the book is very well documented and intricately contrived. However, numerous criticisms may be made of the work. First, it is rather badly arranged, so that it is difficult for the reader to gain a clear-cut idea of what the author is attempting to elucidate. Secondly, the psychological explanations which are given are often rather narrow in their basis, in the opinion of this reviewer. For example, the author's usual explanation of abnormal psychological development is on the basis of individual intrapsychic disturbances. He seldom uses cultural or interpersonal pathology as explanatory factors in his cases. In this he follows rather closely the lead of the traditional Freudian theoretician and deviates from the more modern attitudes, which are beginning to assume greater and greater importance in psychoanalysis and in therapy in general.

The book is not recommended for the beginner in the study of theoretic psychology. It is too complicated and too badly organized for such a person to receive much help from it. On the other hand, it is little more than a more detailed explanation of previous Freudian theories and is not likely to be of great value to the mature student. The usefulness of the book is therefore limited to the advanced student in psychology or psychiatry who is eager to gain more knowledge of the general Freudian structure.

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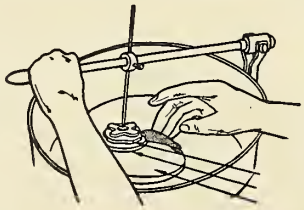
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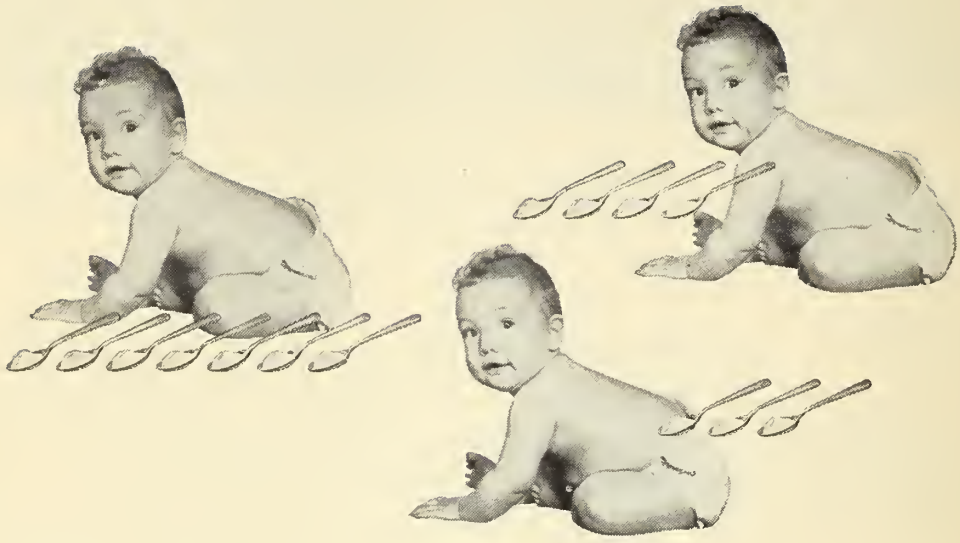
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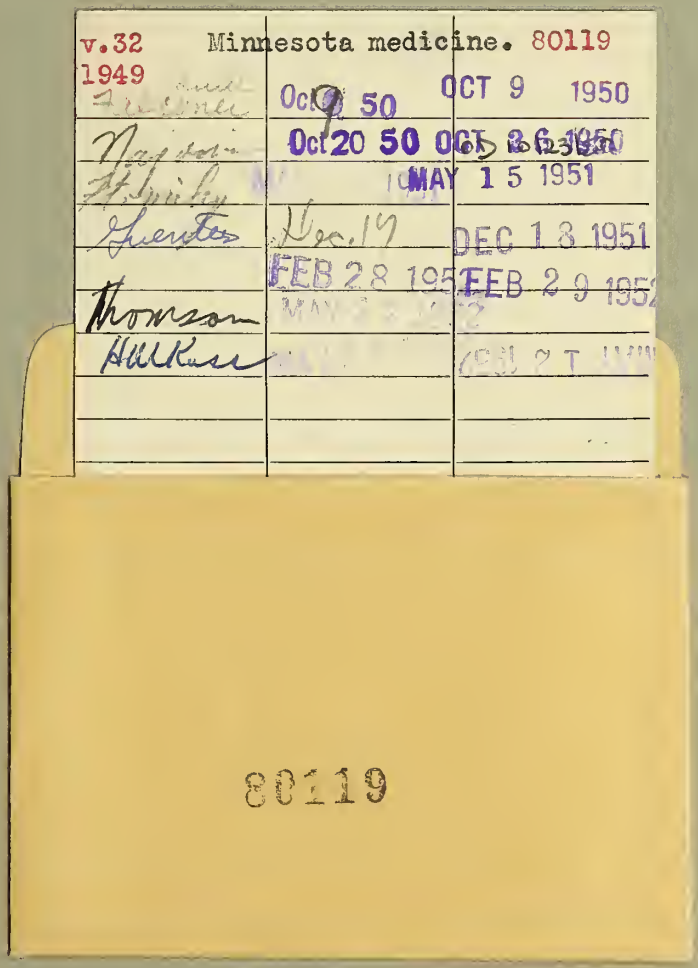
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